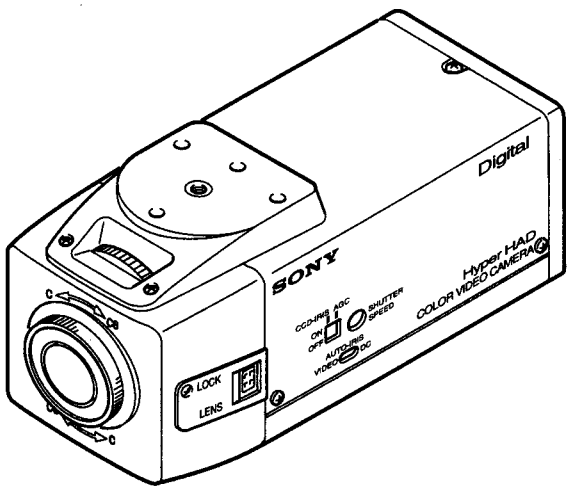
SONY

COLOR VIDEO CAMERA

# SSC-DC30
# SSC-DC30P
# SSC-DC34

## SERVICE MANUAL




Hyper HAD™

## SAFETY RELATED COMPONENT WARNING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

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# SECTION 1
# GENERAL

## 1-1. FEATURES

This SSC-DC30/30P/34 color video camera is equipped with a 1/2 inch Hyper HAD™* (Hyper Hole-Accumulated Diode) CCD (Charge Coupled Device), and also has the following features:

- High sensitivity (Minimum illumination: 1.9 lux, F1.2)
- CCD-IRIS™ function
- Automatic white balance tracking and adjustment
- 8-level electronic shutter
- External synchronization
- Auto-iris lens controlled by video signal or DC power supply
- Automatic backlight compensation /reduced flicker through Smart Control™* (when AGC is set to ON)
- The SSC-DC30/30P has a power multiplex feature.
- The SSC-DC34 has a line lock function.

* "Hyper HAD", "CCD IRIS", and "Smart Control" are trademarks of Sony Corporation.

## 1-2. NOTES ON USE

**Power supply**

The SSC-DC30/30P must always be operated with a 12V DC power supply* or the YS-W130/130P/230/230P camera adapter (not supplied).
The SSC-DC34 must always be operated with a 24V AC class 2 power supply.*

* In the U.S., use a UL-listed class 2 power supply. In Canada, use a CSA-certified Class 2 power supply.

**Handling**

Be careful not to spill water or other liquids on the unit, or to get combustible or metallic material inside the body. If used with foreign matter inside, the camera is liable to fail, or to be a cause of fire or electric shock.

**Operation and storage locations**

Avoid viewing a very bright object (such as light fittings) for an extended period. Avoid operating or storing the unit in the following locations.

- Extremely hot or cold places (operating temperature −10°C to + 50°C; 14°F to 122°F, however, we recommend that the unit be used within a temperature range of −5°C to +40°C; 23°F to 104°F)
- Damp and dusty places
- Where it is exposed to rain
- Where it is subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters
- Where it is subject to fluorescent light reflections
- Where it is subject to unstable (flickering, etc.) lighting conditions

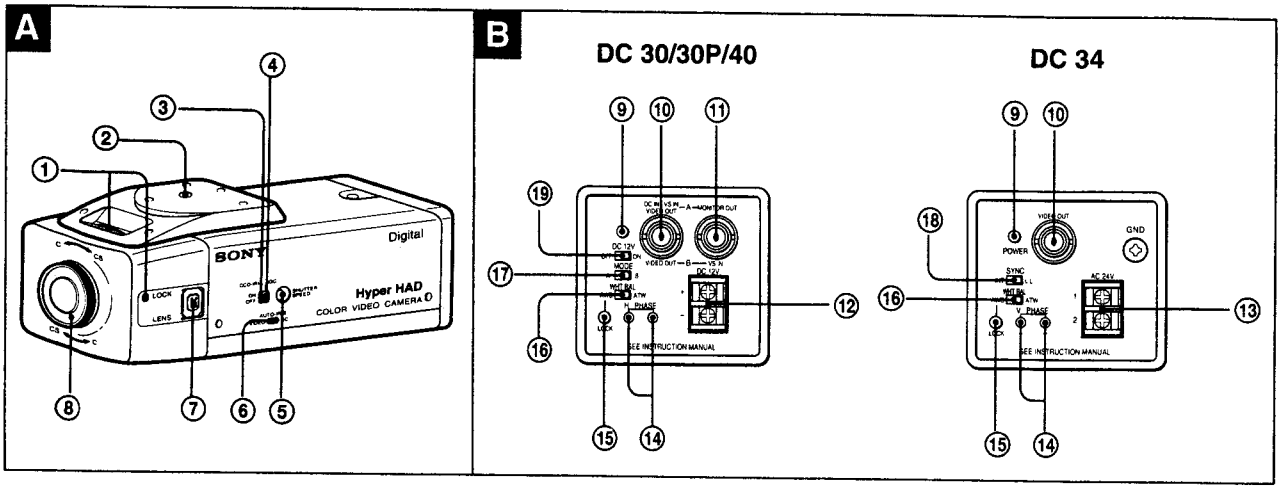
**Care of the unit**

- Remove dust or dirt on the surface of the lens or CCD with a blower.
- Use a dry, soft cloth to clean the body. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent, then wipe dry.
- Avoid the use of volatile solvents such as thinners, alcohol, benzene, and insecticides. They may damage the surface finish and/or impair the operation of the camera.

**Others**

- When using automatic backlight compensation, hunting may occur.
- If you use the CCD IRIS function in locations where the camera is exposed to fluorescent light, a slow color change may occur.

## 1-3. LOCATION AND FUNCTION OF PARTS




### Top/Front/Side A

① Flangeback adjustment ring and locking screw
Use the flangeback adjustment ring to adjust the flangeback (the distance between the lens mounting plane and the image plane).
Use the locking screw to fix the flangeback.

② Tripod adaptor
The tripod adaptor can be attached to either the top or bottom of the camera using a mounting screw (1/4" UNC-20, length=4.5 ± 0.2 mm).

③ CCD IRIS ON/OFF switch
When using a manual iris lens, the CCD-IRIS function automatically adjusts the shutter speed to maintain a suitable exposure level.

④ AGC (Auto Gain Control) ON/OFF switch
AGC automatically adjusts the image gain according to the lighting conditions.

⑤ SHUTTER speed control
When the CCD IRIS ON/OFF switch ③ is set to OFF, you can select one of eight shutter speeds (see below).
SSC-DC30/34: 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
SSC-DC30P: 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000

⑥ DC/VIDEO auto-iris lens control signal switch
Use this switch to set the control signal for the auto-iris lens.
Set to DC to control the auto-iris lens via the DC power supply.
Set to VIDEO to control the auto-iris lens via video signals.

Notes
- When the DC/VIDEO switch is set to VIDEO, backlight compensation cannot be done.
- When the DC/VIDEO switch is set to VIDEO, hunting may occur, that is, the image may become darker or lighter. If hunting occurs, use the LEVEL L/H adjustment screw on the lens to change the incident light level. When adjusting the incident light level, set the ALC (Automatic Light Control) adjustment screw to Av.

⑦ LENS connector (4-pin type)
The LENS connector supplies the auto-iris lens (not supplied) with DC power and a video signal or DC control signal.

⑧ Lens mount
You can mount either C- or CS-mount lenses.
To adjust the mount, turn the flangeback adjustment ring ①.

### Rear B

⑨ POWER indicator

⑩ DC IN/VS IN/VIDEO OUT or VIDEO OUT connector (BNC type)
SSC-DC34 and SSC-DC30/30P (Mode B operation): Used to output video signal to a video equipment through a coaxial cable.
SSC-DC30/30P (Mode A operation): Used to connect the camera adaptor by a coaxial cable. For the suitable camera adaptor, refer to "Notes on Use" above.

⑪ MONITOR OUT or VS IN connector (BNC type)
SSC-DC30/30P (Mode B operation): Used to input VS (video + sync) signal through a coaxial cable.
SSC-DC30/30P (Mode A operation): Used to connect a portable monitor by a coaxial cable for image adjustment.

⑫ DC 12V terminals (10.5V to 16V)
Used to connect a 12V DC power supply. For a suitable power supply, refer to "Notes on Use" above.

⑬ 24V AC terminals (60 Hz)
Used to connect a 24V AC power supply. For a suitable power supply, refer to "Notes on Use" above.

⑭ H PHASE/V PHASE buttons
These buttons compensate for horizontal/vertical phase discrepancies.
Use these buttons to compensate for horizontal discrepancies that may occur when using an extended cable (VS synchronization).

⑮ LOCK button
Use this button to automatically lock the white balance.
With the WHT BAL switch ⑯ is set to AWB, point the camera at a white object so that the screen is completely white, and press this button. The white balance value is automatically adjusted and the current value stored in memory.

⑯ WHT BAL (white balance mode) switch
AWB (Automatic White Balance): This setting renders the LOCK button ⑮ operable. When the switch is set to this position, the white balance always takes the previously stored value.
ATW (Automatic Tracing White Balance): When the switch is set to this position, the white balance is continuously adjusted according to variations in the incident light conditions.

⑰ MODE switch
Use this switch to make the following settings.

| MODE switch setting | Connector ⑩ | Connector ⑪ | Power source |
|---|---|---|---|
| A | DC IN/VS IN/ VIDEO OUT | MONITOR OUT | YS-W130/130P/ 230/230P camera adapter |
| B | VIDEO OUT | VS IN | DC 12V |

⑱ SYNC switch
Use this switch for synchronization.
Set to INT to use internal synchronization.
Set to LL to use the line lock function.

⑲ POWER ON/OFF switch
Use this switch to turn the power supply on and off.
When using a DC 12V power supply, set this switch to ON. This switch does not function when using the YS-W130/130P/230/230P camera adapter (not supplied).

## 1-4. INSTALLATION

### Suitable lenses C

The lens must be either a C- or a CS-mount lens, with a certain maximum projection from the lens mount (see illustration on the right for maximum projection). The lens must not weigh more than 1 kg.

① C-mount lens
② 9mm or less
③ CS-mount lens
④ 4 mm or less

### Plug fitting for an auto-iris lens D

The camera is supplied with a plug to fit the LENS connector. To connect an auto-iris lens, first replace the plug on the lens cable with the supplied plug.

1 Detach the plug from the lens cable.

2 Solder the lens cable to the pins of the supplied plug. (For cable pin assignment, refer to the instruction manual for the lens.)

| | | | |
|---|---|---|---|
| ① | Cover | | |
| ② | Lens cable | | |
| ③ | Rib (If the cable is too thick, cut this off.) | | |
| ④ | Plug (unit accessory) | | |
| ⑤ | Pin 4 | Video signal control | Ground |
| | | DC control | Ground |
| ⑥ | Pin 2 | Video signal control | Not used |
| | | DC control | CONT + |
| ⑦ | Pin 1 | Video signal control | Power supply (DC 9 V, 50 mA) |
| | | DC control | CONT – |
| ⑧ | Pin 3 | Video signal control | Video signal |
| | | DC control | DRV + |

### Fitting the lens E

1 Unscrew the lens mount cap.

2 Screw in the lens, and turn it until it is secured.

3 Attach the lens plug to the LENS connector.
When fitting a manual-iris lens, omit step 3.

4 Adjust the flangeback by turning the C/CS adjustment ring.

5 Secure the locking screw.

Caution When mounting the lens, loosen the locking screw on the side and turn the flangeback adjustment ring fully in the "C" direction. With the adjustment ring set to "CS", mounting a C-mount lens may cause damage to the optical filter.
When not using a lens, reapply the lens mount cover.

### Installing the camera

When mounting the camera on a tripod, attach the tripod adaptor to either the top or bottom of the camera. Use a 1/4" UNC-20 screw to mount the camera on a tripod.

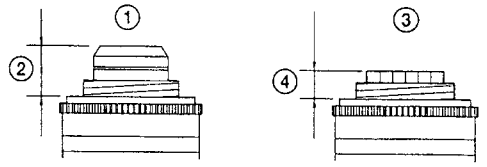
#### Fitting the camera tripod adaptor F

1 Loosen screws ①–④ that secure the tripod adaptor. Remove the adaptor carefully, and do not pull at the screws.

2 Remove screws ⑤ and ⑥.

3 Attach the tripod adaptor on the opposite side, and insert screws ⑤ and ⑥ on the surface from which the adaptor was removed.

C

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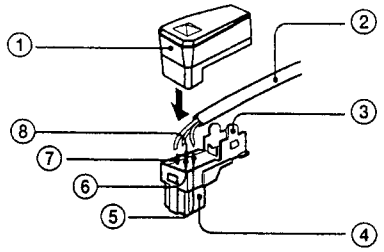


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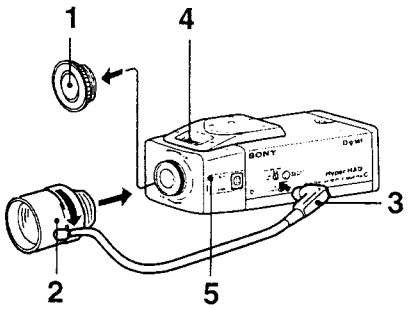
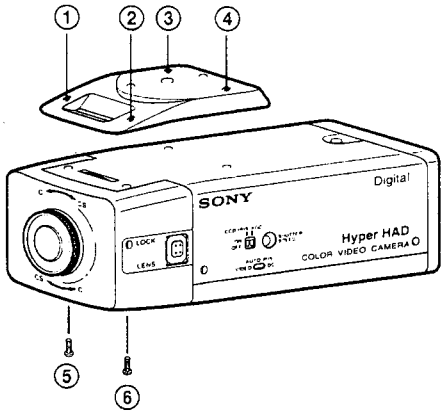



F



## 1-5. CONNECTIONS

### Using a DC 12V power supply

Set the MODE switch to B. When the connections have been made, set the DC 12V power supply switch to ON.

Note To prevent short circuits, do not let the exposed ends of the mains lead wires brush against the rear panel when connecting to the mains lead terminals.

**Using an internal synchronization signal G**

① SSC-DC30/30P (rear)
② VIDEO OUT connector
③ 75 ohm coaxial cable
④ VIDEO INPUT connector
⑤ Power supply
⑥ DC 12 V power switch (set to ON)
⑦ MODE switch (set to B)
⑧ +12 V
⑨ GND (ground)

**Using an external synchronization signal H**

① SSC-DC30/30P (rear)
② VIDEO OUT connector
③ 75 ohm coaxial cable
④ VIDEO INPUT connector
⑤ VS IN connector
⑥ Synchronization output connector
⑦ Synchronization signal (e.g., switcher)
⑧ Power supply
⑨ DC 12V Switch (set to ON)
⑩ MODE switch (set to B)
⑪ +12V
⑫ GND (ground)

### Using a YS-W130/130P/230/230P camera adapter (not supplied) (Power multiplex) I

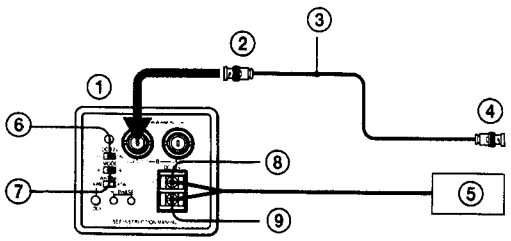
Set the MODE switch to A. When the connections have been made, set the YS-W130/130P/230/230P power supply switch to ON.

① SSC-DC30/30P (rear)
② DC IN. VS IN/VIDEO OUT connector
③ CAMERA IN connector
④ MONITOR OUT connector
⑤ VIDEO INPUT connector
⑥ YS-W130/130P/230/230P camera adapter
⑦ VIDEO OUT connector
⑧ VIDEO INPUT connector (monitor input connector)
⑨ Portable monitor
⑩ 75 ohm coaxial cable
⑪ MODE switch (set to A)

### Using an AC 24V power supply (SSC-DC 34)

- When using a power supply without ground lead (two-lead type), connect the output of the power supply to the AC 24V 1 and 2 terminals of the camera.
- When using a power supply without ground lead (three-lead type), connect the ground lead to the GND terminal and the other two leads to the AC 24V 1 and 2 terminals of the camera.

G

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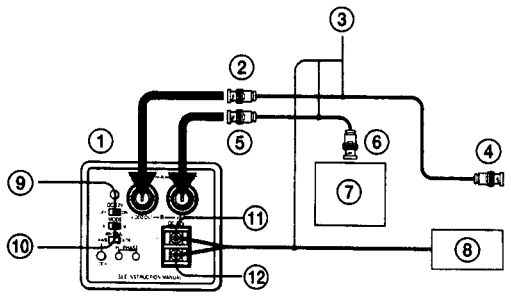


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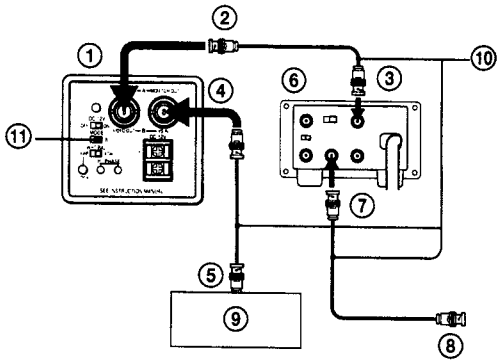


## 1-6. PHASE ADJUSTMENT

When using more than one camera, adjust the phase according to the following procedure.

① Camera switcher
② Monitor
③ Vertical phase
④ Adjustable range

**Vertical phase (L.L mode)** K

The picture may roll vertically if the vertical phase is not set. Use the V PHASE button to adjust the vertical phase.

**Horizontal phase (VS. lock mode)**

The picture may shift horizontally when using an extended cable. Use the H PHASE button to adjust the horizontal phase.

## 1-7. CCD CHARACTERISTICS

The following conditions that may be observed when using a CCD camera are not associated with any fault of the camera.

**Vertical smear**

This phenomenon occurs when viewing a very bright object.

**Patterned noise**

This is a fixed pattern which may appear over the entire monitor screen when the camera is operated at a high temperature.

**Jagged picture**

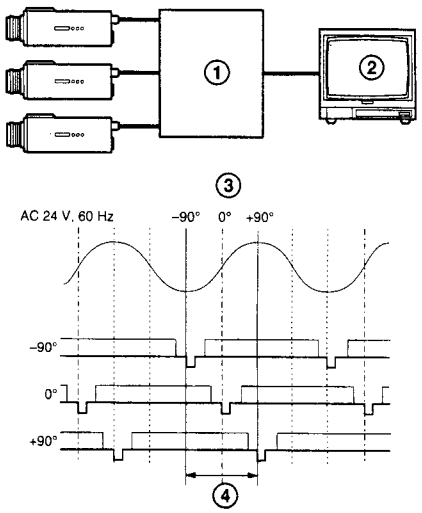
When viewing stripes, straight lines, or similar patterns, the image on the screen may appear jagged.

## 1-8. SPECIFICATIONS

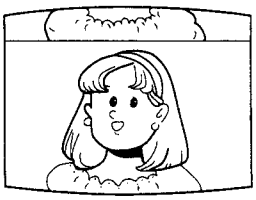
| | |
|---|---|
| Image device | 1/2" interline transfer type CCD |
| Effective picture elements | SSC-DC 30/34: 768 (horizontal) × 494 (vertical)<br>SSC-DC 30P: 752 (horizontal) × 582 (vertical) |
| Lens mount | C-mount/CS-mount adjustable |
| Signal system | SSC-DC 30/34: NTSC color system<br>SSC-DC 30P: PAL color system |
| Synchronization | Internal/external (switched automatically)<br>(SSC-DC 34: internal/line lock) |
| External synchronization signal | VS (sync level: 0.3-5.0Vp-p, 75 ohm) |
| Horizontal resolution | 470 TV lines |
| Minimum illumination | 1.9 lux, F1.2 (with AGC set to ON) |
| Video output | 1 Vp-p, 75 ohm, negative sync |
| Video S/N | 48 dB or more (with AGC set to OFF) |
| Electronic shutter | 8 levels<br>SSC-DC 30/34: 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000<br>8 levels<br>SSC-DC 30P: 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 |
| White balance | AWB/ATW switchable |
| Automatic gain control (AGC) | ON/OFF switchable |
| Power requirements | SSC-DC 30/30P DC 12V: DC 10.5 – 16V<br>YS-W130/130P/230/230P: DC 24V ± 5V<br>SSC-DC 34 AC.24V: AC 24V ± 10% |
| Power consumption | SSC-DC 30/30P DC 12V: 4.5 W<br>YS-W130/130P/230/230P: 5.5W<br>SSC-DC 34 AC 24V: 7 W |
| Operating temperature | –10°C to +50°C (14°F to 122°F) |
| Operating humidity | 20 to 80% |
| Storage temperature | –40°C to +60°C (–40°F to 140°F) |
| Storage humidity | 20 to 80% |
| Shock resistance | 70G |
| Mass | 620g (1 lb 6 oz) |
| Dimensions | 64 × 57 × 150 (w/h/d) mm<br>(2 5/8 × 2 1/4 × 6 1/8 inches) |

Design and specifications are subject to change without notice.

J

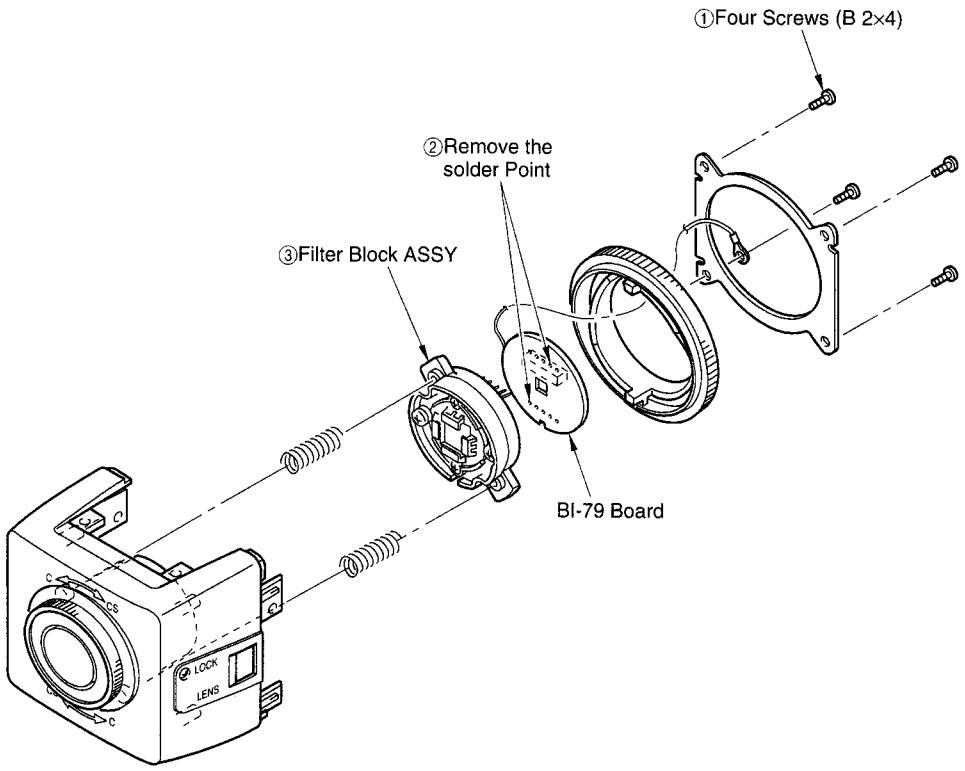



K



# SECTION 2
# SERVICE INFORMATION

## 2-1. REMOVAL OF FILTER BLOCK ASSY




## 2-2. INITIAL SWITCH SETTING

[ ] : **factory setting**

**[SSC-DC30/DC30P]**

• Rear panel (CT-143 Board)

| | | |
|---|---|---|
| SW504 | WHT BAL | AWB ⟷ [ATW] |
| SW505 | POWER | ON ⟷ [OFF] |
| SW506 | MODE | [A] ⟷ B |

• Side panel (PSW-26 Board)

| | | |
|---|---|---|
| SW401 | AUTO IRIS | [DC] ⟷ VIDEO |
| SW402 | AGC | [ON] ⟷ OFF |
| | CCD IRIS (SSC-DC30) | ON ⟷ [OFF] |
| | (SSC-DC30P) | [ON] ⟷ OFF |
| SW-403 | SHUTTER SPEED | [0] |

• C/CS adjusting ring [C] ⟷ CS

**[SSC-DC34]**

• Rear panel (CT-144 Board)

| | | |
|---|---|---|
| SW604 | WHT BAL | AWB ⟷ [ATW] |
| SW605 | SYNC | [LL] ⟷ INT |

• Side panel (PSW-27 Board)

| | | |
|---|---|---|
| SW401 | AUTO IRIS | [DC] ⟷ VIDEO |
| SW402 | AGC | [ON] ⟷ OFF |
| | CCD IRIS | [ON] ⟷ OFF |
| SW-403 | SHUTTER SPEED | [0] |

• C/CS adjusting ring [C] ⟷ CS

## 2-3. EXTENSION HARNESS

**[FC Board ⟷ PSW Board]**

• J-6098-630-A OA-863 (Extension Harness 28 pin)

**[DPR Board ⟷ FC Board]**

• J-6098-640-A OA-864 (Extension Harness 24 pin)

• J-6098-650-A OA-865 (Extension Harness 18 pin)

# SECTION 3
# THEORY OF OPERATION

## 3-1. BI-79 BOARD

Photosensors are arranged in an array on the CCD chip surface.
Light incident on the photosensors is converted into electric charges, the amount of which is in proportion to light intensity. The charges are read out from the photosensors to registers and then shifted serially and conducted to the output.
There are vertical registers and a horizontal register.
The electric charges converted by the photosensor array are transferred field by field to the vertical registers adjacent to each photosensor column. The charges transferred to the vertical registers are shifted vertically with vertical shift clocks V1, V2, V3, and V4, and then transferred in series to the horizontal register.

The horizontal register shifts the charges horizontally with horizontal shift clocks H1 and H2 to send them to the output.
The output from IC101 is delivered as a voltage signal converted from the charges by the capacitor at the output and sent to the DPR-53 board through buffer Q101.
On the SSC-DC30/DC30P/DC34, A GND and D GND of the CCD imager (pins ⑤, ⑧, ⑭ and ⑮ of IC101) are floated at + 9 volts with respect to the ground of the board, so the + 9 volts are the reference for all other terminals such as the power supply and driving pulses. ($V_{DD}$ is higher than "GND" by + 15 volts, so its potential level is + 15 + 9 = + 24 volts.)

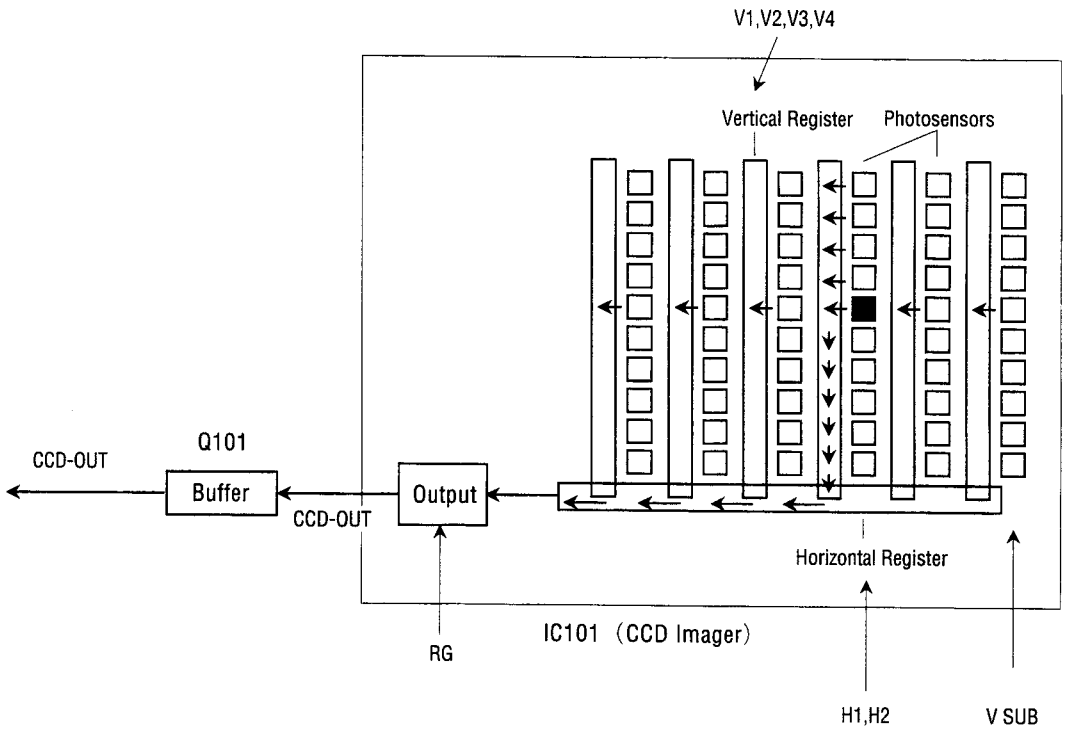



**Fig. 1 Interline Transfer**

## 3-2. DPR-53 BOARD

(1) Sample hold/AGC
(2) {Timing signal generation / Synchronizing signal generation / CCD vertical shift clock driver}
(3) Vertical SUB voltage supply circuit
(4) Horizontal register driving pulse voltage
(5) Basic clock generation and selector
(6) Bias amplifier for A/D conversion
(7) A/D converter
(8) Digital signal processing
(9) Optical detector (OPD)
(10) Phasing
(11) D/A converter
(12) Analog encoder
(13) fsc clock generation and selector
(14) Chrominance signal output processing
(15) 4 volt generator for digital circuits

### 3-2-1. Sample Hold/AGC

Separates the signal (CCD OUT) from the CCD imager by splitting it into two signals, DATA and PG, and by sampling and holding them at their respective timings. This is for mutually offsetting on-chip amplifier noise and reset noise occurring from the CCD by taking advantage of the fact that the noise superposed on the pre-charge portion (field through portion) is almost the same as that superposed on the data portion. This circuit is called the correlated double sampling circuit (CDS circuit).

The DATA and PG signals enter IC201 where they are both sampled and held by the sampling and holding pulses XSHP and XSHD. The signal separation takes place by taking the difference of DATA and PG in this state. The separated signal is delivered through the AGC amplifier.

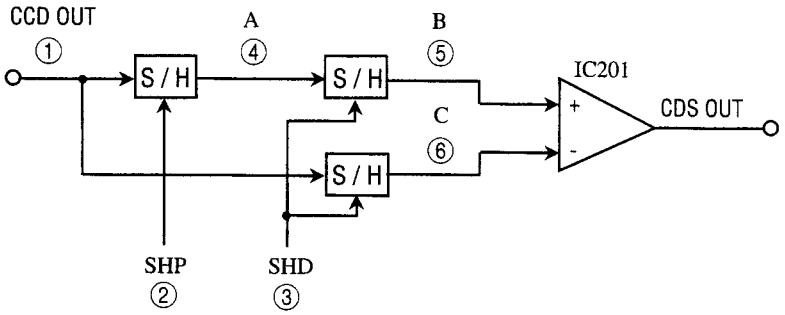



**Fig. 2 Block Diagram of CDS Circuit**

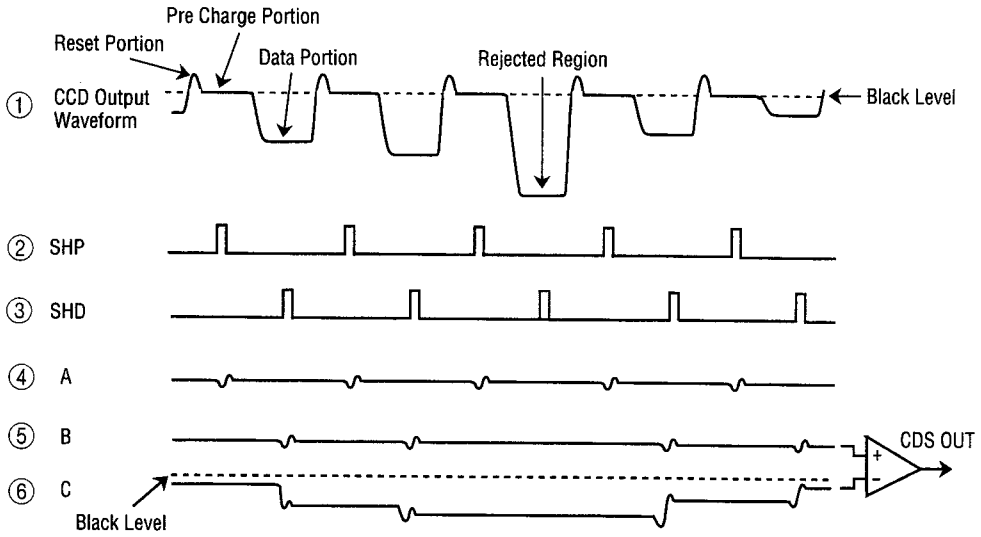



**Fig. 3 Waveform of Each Section of CDS Ciruit**

## 3-2-2. Timing Signal Generation / Synchronizing Signal Generation / CCD Vertical Shift Clock Driver

IC202 is an integrated circuit in which the three functions above are implemented on one chip.

**• Timing signal generation**

The clock pulse necessary for driving the CCD, sampling and holding pulse, clamping pulse, and others are generated by the input of the basic 28 MHz clock.

This machine uses the following pulses:

| | |
|---|---|
| CL | : 28 MHz basic clock divided by two |
| MCK | : Master clock for digital circuits |
| H1 and H2 | : CCD imager's horizontal register driving pulses |
| PG | : Pre-charge gate pulse |
| CLP1 and CLP4 | : Clamping pulses |
| XSHP and XSHD | : Signal separation sampling and holding pulses |
| XSP1 and XSP2 | : Color separation sampling and holding pulses |
| XSUB OUT | : Electric charge sweep-away pulse for shutter speed control |
| XSG2 | : Electric charge read-out pulse |
| PBLK | : Pre-blanking pulse |
| ID | : Line identification pulse |

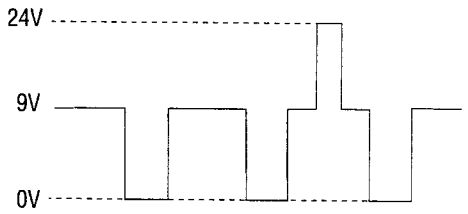
**• Synchronizing signal generation**

In addition to the CCD driving clock pulses above, the following various timing signals necessary for making the video signal are generated:

| | |
|---|---|
| OSYNC | : Composite sync signal |
| OBLK | : Composite blanking signal |
| OHD and OVD | : Horizontal and vertical driving signals |
| OFLD | : Field signal |
| BF | : Burst flag signal |
| OSC | : Subcarrier signal |

**• CCD vertical shift clock driver**

Vertical register driving pulses V1 to V4 of the CCD imager and electric charge sweep-away pulse SUB are driven out.




Because V1 through V4 are delivered in three states, 0, 9 and 24 volts, as shown in the accompanying figure, the ground of the CCD imager is floated at 9 volts.

### 3-2-3. Vertical SUB Voltage Supply Circuit

This is the circuit for supplying the prescribed voltage to the overflow drain of the CCD imager. Q201 and Q202 form a regulator with the V SUB control voltage as its reference voltage.
The V SUB control voltage is adjusted by the electronic variable resistor (IC822) on the FC-64 board so that the overflow drain voltage of the CCD imager will be the prescribed voltage. In this machine, because the ground of the CCD lies at 9 volts, the V SUB terminal is supplied with a voltage 9 volts higher than the value indicated by the alphabetical letter on the rear of the CCD.

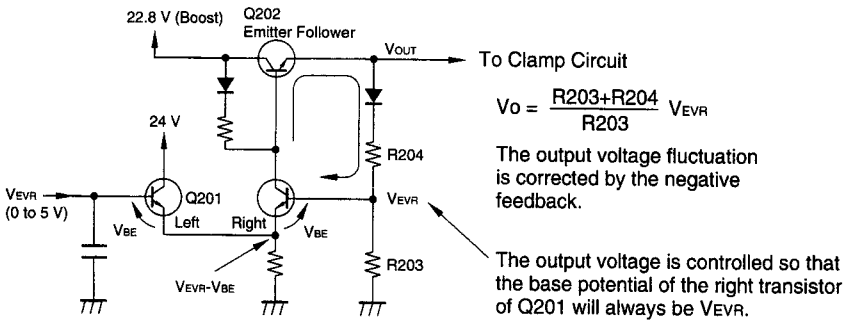



**Fig. 4 V SUB Booster Circuit**

### 3-2-4. Horizontal Register Driving Pulse Voltage

**• Horizontal clocks H1 and H2**

Because the ground of the CCD is at 9 volts as stated above, it is also necessary to add 9 volts DC to H1 and H2.

**• Pre-charge gate pulse PG**

As with the V SUB voltage supply circuit, this is also adjusted by an EVR (IC822 on the FC-64 board) in such a way as to obtain a voltage 9 volts higher than the value indicated by the number on the rear of the CCD.

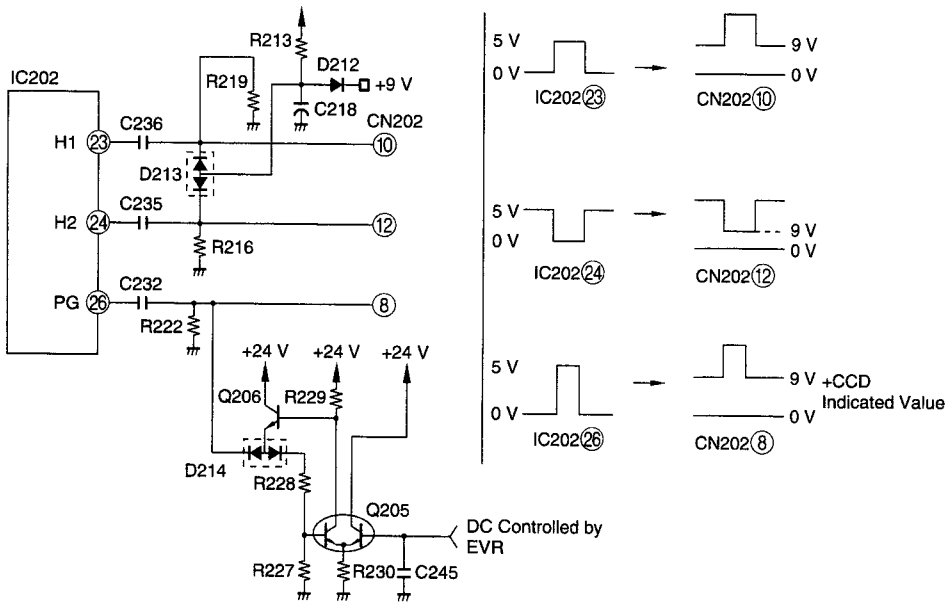



**Fig. 5 Clamping of Horizontal Register Pulse**

### 3-2-5. Basic Clock Generation and Selector

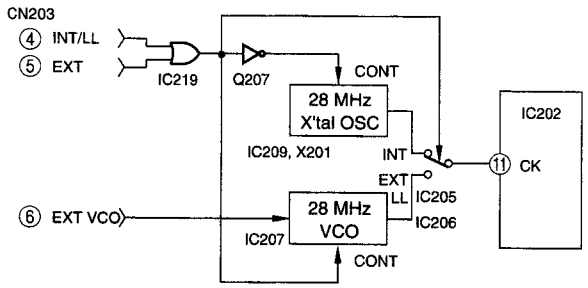



**Fig. 6 Block Diagram of Basic Clock Selector**

**<SSC-DC30/DC30P>**

The input to timing generator IC202 is a 28 MHz basic clock and is selected according to whether internal synchronization (INT) or external synchronization (EXT) is input.

The EXT signal at pin ⑤ of CN203 is the output from the synchronism discriminating IC on the FC-64 board and will be at the high level when an external synchronization input is present.

Because the INT/LL signal at pin ④ of CN203 is fixed to the ground of the PSW-26 board, a selection is only made by the EXT signal as follows:

**• When EXT is Low (INT mode)**

The output from the 28 MHz crystal oscillator is applied to pin ⑪ of IC202. In this case, the 28 MHz VCO stops oscillating.

**• When EXT is High (EXT mode)**

The output from the 28 MHz VCO is supplied to pin ⑪ of IC202. In this case, the 28 MHz crystal oscillator stops oscillating.

**<SSC-DC34>**

The input to timing generator IC202 is a 28 MHz basic clock and is selected according to whether internal synchronization (INT) or line lock (LL) is input.

Because the EXT signal at pin ⑤ of CN230 is fixed to the ground of the FC-64 board, a selection is made by the INT/LL signal at pin ④ of CN203 (which is high when in the LL mode).

**• INT mode**

The output from the 28 MHz crystal oscillator is supplied to pin ⑪ of IC202. In this case, the 28 MHz VCO stops oscillating.

**• LL mode**

The output from the VCO is supplied to pin ⑪ of IC202. In this case, the 28 MHz crystal oscillator stops oscillating.

### 3-2-6. Bias Amplifier for A/D Conversion

IC203 performs the following function.

**• 9.5 dB amplifier**

Matches in level of the S/H and AGC (IC201) outputs and the A/D converter (IC211) input.

**• Sampling and holding for A/D converter**

Samples and holds again in order to time with the A/D conversion clock.

**• Reference voltage generation for A/D converter**

Generates the reference voltage supplied to the A/D converter.

### 3-2-7. A/D Converter

The signal sampled and held by IC203 through the 9.5 dB amplifier is divided for the lower comparator (VINL) and upper comparator (VINH) and supplied to the A/D converter (IC211).

At the rising edge of the clock input to pin ㉒, the upper comparator compares the input signal to the reference voltage and latches. Then, at the falling edge of the clock, the lower comparator compares the input signal with the reference voltage and latches.

The result is delivered as 10-bit digital data synchronous with the rising edge of the clock.

### 3-2-8. Digital Signal Processing (DSP)

The signal quantized by the A/D converter (IC211) is sent to the digital signal processor IC (IC214).
Then, the signal goes through the built in one horizontal line memory and enters luminance processing and chrominance processing as the H1D signal which is delayed one horizontal line, and the H2D signal, which is the average of the original signal and the signal delayed by two horizontal scanning lines.

**<Luminance signal processing circuits>**

The H1D signal goes through a trap in order to get rid of its chrominance component so as to form a horizontal aperture signal. The horizontal and vertical aperture signals are added and processed, such as that by a detail enhanser (amplification of fine amplitudes), followed by addition to the mainstream H1D signal. Gamma correction then takes place. A synchronizing signal is added, followed by the conversion by a D/A converter into an analog signal for output.

- **Vertical aperture**

The vertical aperture signal is obtained by the subtraction H1D - H2D through the use of three horizontal line delayed signals. It then goes through a low pass filter with an approximately 1.5 MHz band as well as treatment for gain control and fine amplitude slicing.

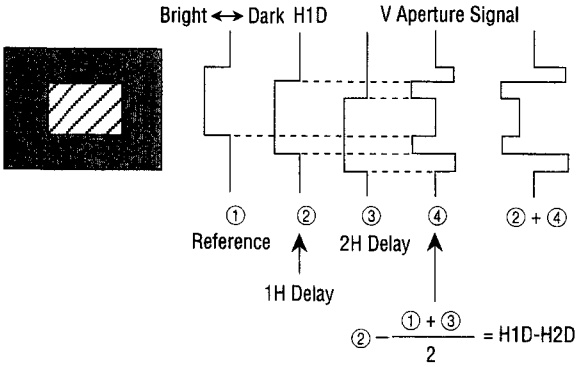



**Fig. 7 Principle of Vertical aperture**

- **Horizontal aperture**

The horizontal aperture signal first enters level balancing in order to suppress the folded component which will vary with the color temperature of the light source. That is, there are four combinations of pixels read out from the CCD: (Mg + Cy), (G + Ye), (G + Cy) and (Mg + Ye), so the gains are adjusted so that the pixels will match in level.
Then, it goes through the same low-pass filter as for the main luminance signal in order to get rid of its chrominance component, and is then treated with non-linear compression of the low luminance portion and enters the block so as to form the aperture signal. The horizontal aperture signal is composed from the two desired frequencies (3.58 and 7.16 MHz) extracted through band-pass filters and amplified by their respective gains.

- **Generation of the Y signal**

The output from the complementary color checkered CCD imager is read out simultaneously in pairs of pixels with a shift of one (vertical) pixel between an odd and an even number fields.

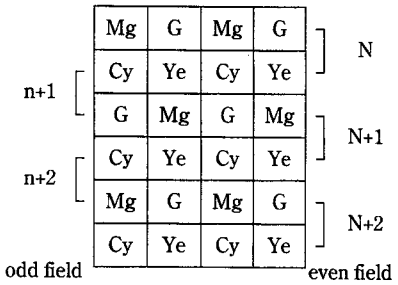



**Fig. 8 Complementary Color Checkered CCD**

For example, the output during an even number field is:

Mg+Cy → G+Ye → Mg+Cy ... N
G+Cy → Mg+Ye → G+Cy ... N+1
Mg+Cy → G+Ye → Mg+Cy ... N+2

Then, by averaging the data of the N-th line and the (N+2)-th line:

G+Cy Mg+Ye G+Cy Mg+Ye 1 Line → H1D
Mg+Cy G+Ye Mg+Cy G+Ye (0+2) Line → H2D

are obtained.

If the H1D signal is passed through a low pass filter with a cutoff frequency half that of the repetition of (G + Cy), (Mg + Ye), etc.:

G+Cy+Mg+Ye G+Cy+Mg+Ye

as above, the signal takes the form of the sums added in the direction of the time axis.

Because Y = (G + Cy) + (Mg + Ye) = 2R + 3G + 2B has a value near the spectral characteristic of the luminance signal (Y signal) of the NTSC Standards, it can be treated as the Y signal as it is.

• **Clamp**

The H1D signal is clamped by the microprocessor (IC823 on the FC-64 board).

• **Aperture adjustment**

The horizontal and vertical aperture signals are added to form the total aperture signal which, after under going gain control and slicing of fine amplitudes, is added to the main signal.

• **Gamma correction**

For gamma correction, a gamma curve is obtained by entering the lower 9 bits of the 10 bits in the ROM (the output is 8 bits). The remaining KNEE characteristic portion is constructed by linear approximation.

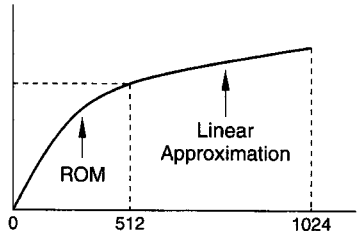



**Fig. 9 Gamma Correction Curve**

• **Y output**

After under going gamma correction, the Y signal is given a setup and goes through white clipping. In addition, this signal is blanked with the BLK signal and the SYNC signal is added to it.

The Y signal so treated is converted by the built-in D/A converter into an analog signal for output.

**<Chrominance signal processing circuits>**

The H1D and H2D signals are separated into data streams which are easy to mathematically operate later. Both data streams pass through respective low-pass filters and become the G and R/B signals through a matrix circuit. Then, both signals go through gamma correction respectively and are regenerated into R-G/B-G, the synchronization of which is transferred to another clock in the SFC block. Following the mathematical operation by HUE/GAIN, it is delivered as a 8-bit digital signal representing R-Y/B-Y.

• **Color separation**

The H1D and H2D signals are separated into the S1 and S2 signals as follows:

〈G+Cy (Mg+Cy)〉〈G+Cy (Mg+Cy)〉 ··· S1
〈Mg+Ye (G+Ye)〉〈Mg+Ye (G+Ye)〉 ··· S2

The S1 and S2 signals go through their respective low-pass filters by which their bands were limited to about 600 KHz/–3 dB.

• **Clamp**

The signals past the low-pass filters are clamped by the microprocessor.

• **Matrix**

From the S1 and S2 signals having undergone band limit, R, G, and B principal color signals are made according to the following equations:

$$\begin{cases} Yc = S1+S2 = (G+Cy) + (Mg+Ye) = 2R+3G+2B \\ Cr = -(S1-S2) = -\{(G+Cy) - (Mg+Ye)\} = 2R-G \\ Cb = -S1-S2 = (Mg+Cy) - (G+Ye) = 2B-G \end{cases}$$

$$\begin{cases} G = Yc - (Cr+Cb) \\ R = Cr+\alpha * Yc \\ B = Cb-\beta * G \end{cases}$$

$\alpha$ and $\beta$ are matrix constants of the relevant colors.

**• White balance**

The decomposed R, G, and B signals enter the white balance control block. The white balance control signal controls the gain of the R/B signals based on the color temperature of the light source illuminating the object, calculated by the microprocessor, while it fixes the gain of the G signal.

**• Gamma correction**

The G and R/B signals passes through their respective gamma correction circuits. The gamma correction circuits are the same as for the Y signal, that is, the lower 9 bits are passed through the ROM for compression into 8 bits and the remaining half are linearly approximated.

**• Clock transfer**

The RGB signal past gamma correction undergoes the mathematical operations, R-G and B-G, and transfer to another clock takes place.

On this camera, the signal is delivered from the block operating on MCK to the block operating on CL.

**• Linear matrix**

The R-Y/B-Y signal is made by performing a mathematical operation with the constants GAIN and HUE upon the R-G/B-G signal on a time sharing.

R-Y/B-Y is composed by the following mathematical operations:

Y = 0.3R+0.59G+0.11B

R-Y = 0.70 (R-G) -0.11 (B-G)

B-Y = 0.89 (B-G) -0.30 (R-G)

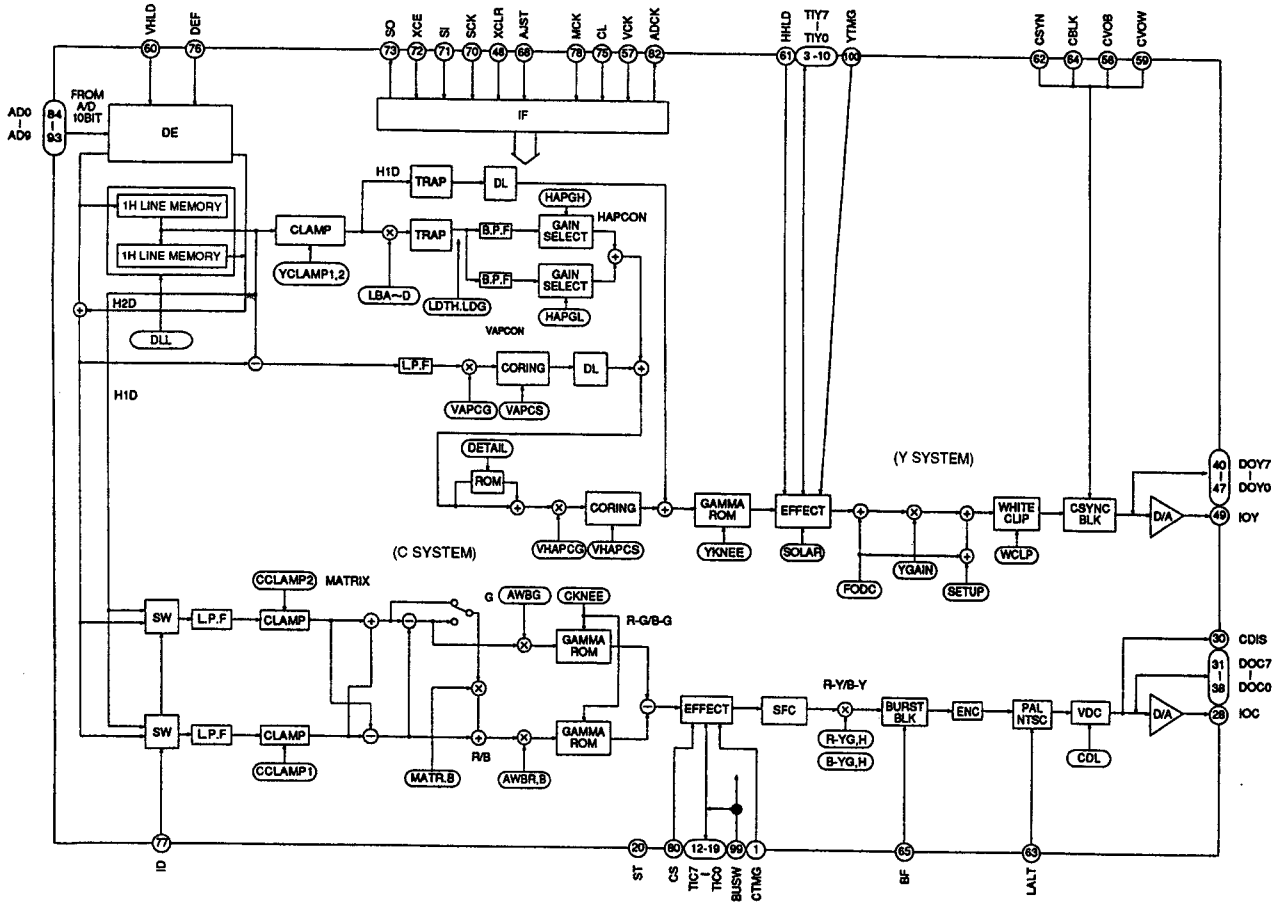



**Fig. 10 Block Diagram of Digital Signal Processor IC (IC214)**

### 3-2-9. Optical Detector (OPD)

IC213 is called an optical detector (OPD). With an input of 10-bit digital data, it realizes AE and AWB in combination with the microprocessor (IC823) on the FC-64 board.

### 3-2-10. Phasing

IC204 delay the BLK, SYNC and BF pulses generated by the synchronizing signal generator (IC202) so that they will be in phase with the digital signal processing IC (IC214) and analog encoder (IC218).

### 3-2-11. D/A Converter

The digital signal processing IC delivers an 8 bit digital signal which represents R-Y/B-Y, that is, which is alternately R-Y and B-Y. It is so called point serial. The CDIS signal is delivered at the same time as the identifying signal for it. In the D/A conversion of this R-Y/B-Y by IC215, separation into R-Y and B-Y takes place at the same time by use of the CDIS signal once and twice inverted. (The reason why the twice inverted CDIS is used instead of the original CDIS is due to the timing of the D/A converter.)

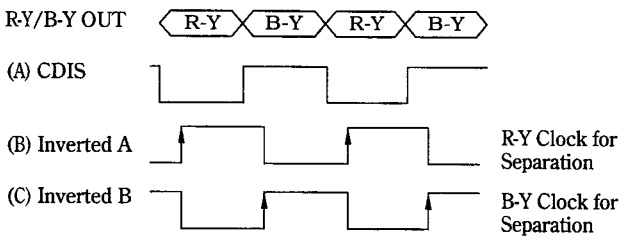



**Fig. 11 D/A Conversion Timing**

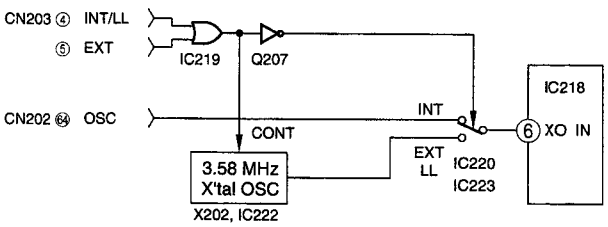
### 3-2-12. Analog Encoder

The R-Y and B-Y signals are converted into an analog signal, which gets rid of its clock component through a simple low pass filter and then enters the analog encoder (IC218) where it modulates the fsc input to pin ⑥ so as to form a chrominance signal for output.

### 3-2-13. fsc Clock Generation and Selector

The fsc input to the analog encoder is selected as follows according to the signaling method employed and state of synchronism:

<NTSC>




INT mode : The OSC output at pin ⑭ of IC202 (the 28 MHz basic clock divided by 8) is applied to pin ⑥ of IC218.

EXT or LL mode : The output from the 3.58 MHz crystal oscillator is applied to pin ⑥ of IC218. (subcarrier free run)

<PAL>

Regardless of the state of synchronism, the output from the 4.43 MHz crystal oscillator is applied to pin ⑥ of IC218.

**Fig. 12 Block Diagram of fsc Change-over**

### 3-2-14. Chrominance Signal Output Processing

The output from the analog encoder (IC218) passes through buffer Q211 and then enters an analog switch (IC216) for the purpose of cleaning the blanking intervals.

The method employed here is to replace the blanking intervals except the burst flag with the DC voltage supplied from the EVR.

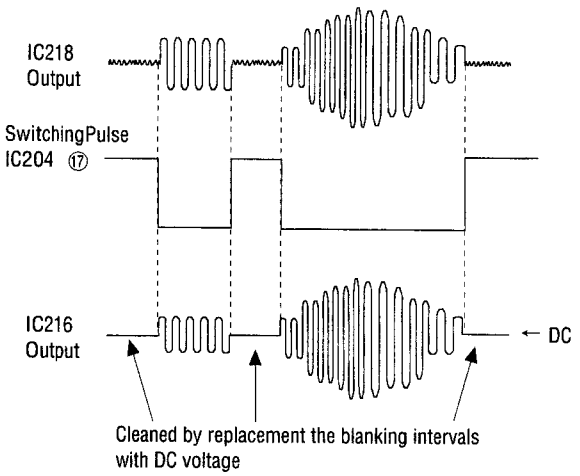
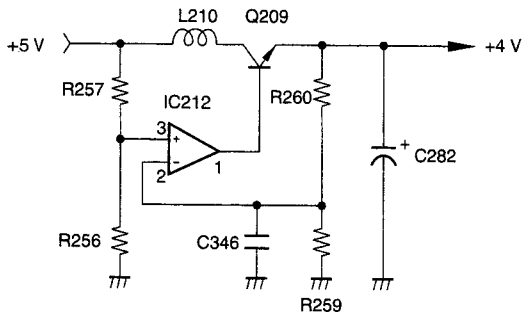



**Fig. 13 Cleaning of blanking Intervals**

The C signal with its blanking intervals cleaned passes through band pass filter FL201 and is delivered to the FC-64 board.

### 3-2-15. 4 Volt Generator Circuit for Digital Circuits




From +5 volts, the generator makes the +4 volts used in the digital process IC (IC214), OPD (IC213) and other digital circuits. R256 and R257 establishes a reference voltage, and R259 and R260 are set to a stable output of 4 volts.

**Fig. 14 4 Volt Generator Circuit**

## 3-3. FC-64 BOARD

(1) Y/C MIXING circuit
(2) Electronic shutter/CCD IRIS
(3) External synchronization
(4) Microprocessor peripheral circuits
(5) Automatic iris circuit

### 3-3-1. Y/C MIXING Circuit

The Y signal delivered from the DPR-53 board passes through a delay line (DL) in order to match the delay of the 7.16 MHz LPF with the chrominance signal. It is then amplified by video amplifier IC813.

This signal is mixed with the C signal also amplified by IC813 and the resultant signal is driven by IC818 and delivered as the composite signal.

### 3-3-2. Electronic Shutter/CCD IRIS

**• Electric Shutter**

For electronic shutter operation, the microprocessor (IC823) reads in the setting of the rotary switch (SW403 on the PSW board) and sends shutter data ED0, 1, 2, and SMD2 to IC202 on the DPR-53 board. At this time, the X SUB pulse is sent through IC819 as it is.

**• CCD IRIS**

Shutter speed control is accomplished as follows:

(i) Calculates the integral by OPD.
(ii) Compares the result of (i) with the reference value provided in the microprocessor and takes the difference between them.
(iii) Calculates the output from the result of (ii) using the output value table provided in the microprocessor and sends the outputs from PWM OUT.
(iv) Compares PWM converted through LPF into a DC voltage with a ramp wave with a period of one field and makes the SWND signal with a pulse width proportionate to the object illuminance.
(v) From the X SUB pulse, removes the charge sweep-away pulse by the width of the SWND signal and delivers the resultant signal to IC202 on the DPR-53 board.

### 3-3-3. External Synchronization

The synchronization mode is INT or VS lock for the SSC-DC30/DC30P and INT or LL for the SSC-DC34.

**<VS mode> (for the SSC-DC30/DC30P)**

The VS signal, applied to pin ① of CN802, goes through buffer Q212 and synchronizing signal separation is performed by Q802 and IC834.

The separated SYNC signal is divided into three parts: The first is inverted by IC836 and then sent to the synchronism detector (IC814). The detector output is used to control the synchronization modes as the EXT signal which goes high when a synchronizing signal is detected.

The second is sent to analog switch IC817 as an HD signal with its equalizing pulse portion masked by a monostable multivibrator (IC807). On the other hand, another HD signal is generated by IC202 on the DPR-53 board. Its pulse width is varied through monostable multivibrators (IC803 and IC810). It is then sent to IC817. When the EXT signal is high, these two HD signals are selected as the output of IC817 and their phases are compared by IC812. The output of this phase comparison is integrated by LPF into a DC voltage which is applied to the DPR-53 board as the control voltage of VCO.

As to the third, its equalizing pulse portion is detected by Q805, IC829 and IC830 and then its pulse width is varied through a monostable multivibrator (IC810). This signal is masked by the pulse made by IC831 and IC832 and with its polarity inverted every field. The resultant signal is the VR signal which is reset once every two times of vertical scanning and is sent to the DPR-53 board.

**<LL mode> (for the SSC-DC34)**

When the INT/LL selection switch is set to the LL position, the LL mode is entered. The V PULSE input is inverted by IC806 and then goes through a monostable multivibrator (IC803) where its pulse width is varied by the voltage from the EVR. The resultant signal is sent to IC817. On the other hand, the VD signal generated by IC202 on the DPR-53 board is inverted by Q807 and also sent to IC817. Because the EXT signal is fixed low, these two are selected as the output of IC817 and the time constant for phase comparison is changed over at the same time.

Then, IC812 compares the phases of V PULSE and VD and the output of this phase comparison is integrated into a DC voltage which is applied to the DPR-53 board as the control voltage of VCO.

### 3-3-4. Microprocessor Peripheral Circuits

The microprocessor (IC823) has the following functions:

**1. Peripheral IC control**

- OPD communication
  Together with IC213, takes in the input data for AE and AWB.
- DSP communication
  Communicates with IC214 as to white balancing, picture quality and other data.
- $E^2$ PROM communication
  Reads out and writes in to $E^2$ PROM (IC820).
- EVR communication
  Communicates to EVR (IC822) data.
- Adjusting fixture communication
  Communicates with the adjusting fixture communication IC (IC825).

**2. AE processing**

**• Block diagram**

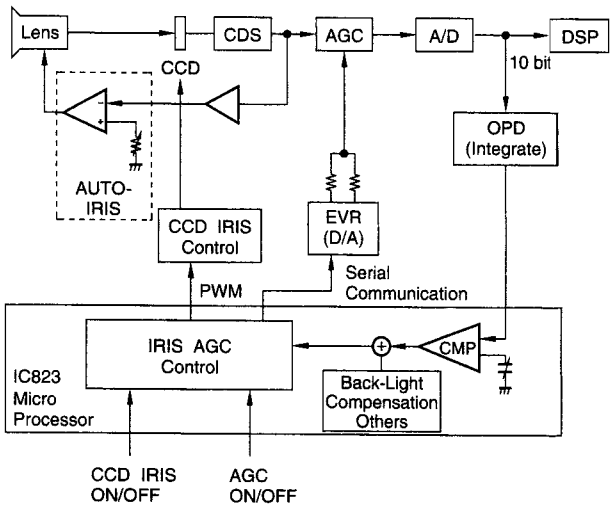



**Fig. 15 Block Diagram of AE Processing**

Control of the CCD iris and AGC are carried out by the A/D converted and integrated AGC output being taken into the microprocessor as the detection , as well as by software.

For control of the auto-iris lens, the signal before the AGC is passed through a variable gain amplifier, the amplifier output (IRIS OUT) is used to form a feedback loop, and the software controls the gain of this amplifier.

• **AGC amplifier control**

The AGC amplifier of IC201 provides controllable gains ranging from about 2 to 4 volts DC while the controlling EVR (D/A) has an output range from zero to 5 volts DC with a precision of 8 bits. Therefore, the actually obtainable precision is only 6 bits or so. So, two channels are used for the EVR output and this arrangement provides a precision equivalent to 12 bits.

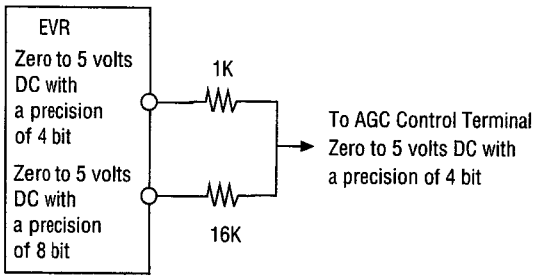

EVR
Zero to 5 volts DC with a precision of 4 bit
Zero to 5 volts DC with a precision of 8 bit
1K
16K
To AGC Control Terminal
Zero to 5 volts DC with
a precision of 4 bit

**Fig. 16 AGC Control Voltage**

• **Software processing**

Control of iris and AGC is performed as shown in the figure below.

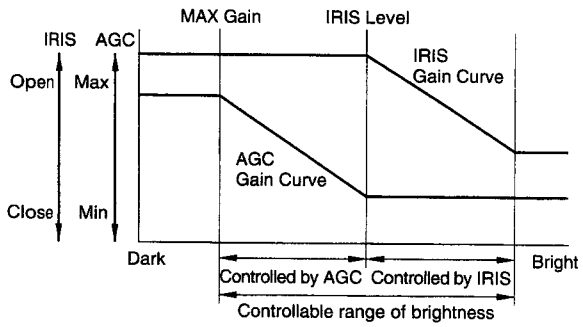



**Fig. 17 IRIS AGC Curve**

The detection value obtained from the OPD is compared to the reference value in the microprocessor, and the back-light compensation proportionate to the object brightness is added to the comparison result. The control values for the iris and AGC are determined from this. Whether the iris or AGC is to be controlled is decided from these control values. Their respective controlled variables are calculated by:

a) the AGC fixed to 0 dB in the case of iris control, and
b) an open iris in the case of AGC control.

Note that iris control takes place alternatively on the CCD iris or automatic iris lens. (Control of both is impossible.)
In addition, there is a function to automatically reduce the flicker occurring under fluorescent lamps in the area with a AC mains frequency of 50 Hz. This correction is accomplished by detecting the flicker components from the integral of the OPD signal and modulating the AGC amplifier output thereby.

**3. White balance control**

There are two modes, AWB and ATW, and mode control is performed by the microprocessor which reads in the state of a selector switch.

a) AWB
When the LOCK switch is pressed, the microprocessor obtains the integrals of the R, G, and B signals from the OPD, calculates the gains for the R and B signals so that they match the G signal in level, and sends the gains to IC214. These values are held until the LOCK switch is pressed again.

b) ATW
In order to allow cases of shooting a monochromatic object other than white, the same operation starts as when LOCK is pressed for AWB but after making a decision as to whether to activate white balancing or not. Because this correction takes a certain length of time to take place, it involves a longer settling time than AWB.

**4. Shifter operation**

On the SSC-DC30/DC30P, the horizontal shifter is selected while, on the SSC-DC34, the vertical shifter is selected. When the SHIFT (+) or (-) switch is pressed, the data from the EVR varies and the pulse width of the monostable multivibrator becomes variable, so that the phase is shifted. If the switch is not pressed, the previous value is maintained.

### 3-3-5. Auto-Iris Circuit

IC804 is used to form a circuit to control the auto-iris lens with a DC servo using the level at IRIS OUT. The power to this circuit is interlocked with the auto-iris lens selection switch, so power will only be supplied when the DC servo is selected.

## 3-4. IR-16 BOARD

This is a connector board for the auto-iris lens.
On the SSC-DC30/DC30P, a regulator (Q751) is mounted for superposition of a DC voltage.

## 3-5. PSW-26 BOARD (for the SSC-DC30/DC30P)

### 3-5-1. Power Supply

**<12 volt DC mode>**
12 volts are supplied to the DC/DC converter through D403. When the POWER switch is turned on, a control voltage self-excited circuit consisting of Q408 to Q411 and IC402 and IC403 becomes active and delivers 5, 9, and 24 volts at P401.

**<Superposed DC mode>**
A DC voltage, regulated by Q401, Q402, and Q751 on the IR-16 board, is applied to P401 through D401. The self excited control voltage circuit is always active regardless of whether the POWER switch is on or off and the P401 output is available.

### 3-5-2. Superposed Synchronizing Signal Separation and Change-over to VS

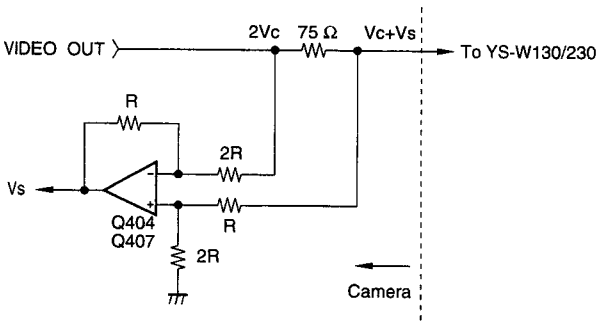



**Fig. 18 Block Diagram of Synchronizing Signal Separation**

Separates only Vs from where the video signal Vc and the synchronizing signal Vs are superposed. Here, Q404 and Q407 form a differential amplifier, from which the output:

$$Vc + Vs - \frac{1}{2} \times 2Vc = Vs$$

is obtainable by setting the respective gains appropriately. Only the synchronizing component is separated.

The synchronizing signal thus separated enters an analog switch (IC401). If the MODE A/B selector switch is set to MODE A, this superposed synchronizing signal is selected while, if set to MODE B, the input to the VS IN terminal (CN503 on the CT-143 board) is selected for delivery to the FC-64 board.

### 3-5-3. Various Switches

There are various externally controllable switches.

## 3-6. CT-143 BOARD(for the SSC-DC30/DC30P)

Equipped with various input/output terminals and control switches.

## 3-7. PSW-27 BOARD (for the SSC-DC34)

Equipped with an AC/DC converter (P401) to generate 5, 9, and 24 volts DC from 24 volts AC, a photocoupler (IC401) to generate the rectangular wave necessary for line lock, and synchronized to the AC mains frequency, and various externally controllable switches.

## 3-8. CT-144 BOARD (for the SSC-DC34)

Equipped with various input/output terminals and control switches.

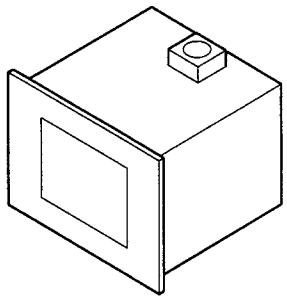
# SECTION 4
# ADJUSTMENT

## 4-1. PREPARATIONS

### 4-1-1. Equipment Required

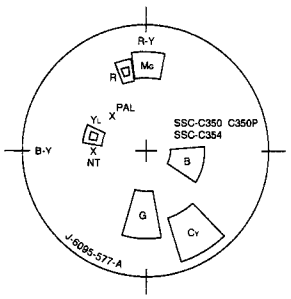
| J-6029-140-A | Pattern Box PTB-500 |
|---|---|

• Light source for test chart

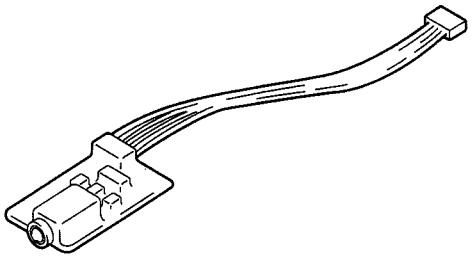


| J-6095-577-A | Vectorscope Scale |
|---|---|

• For color adjustment

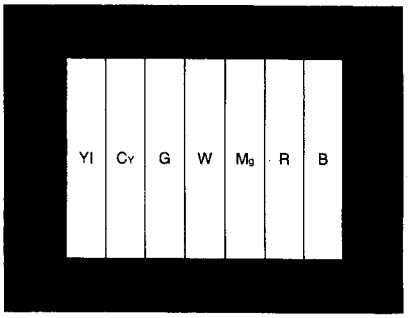



| J-6098-670-A | Adjustment Commander Relay Jig |
|---|---|



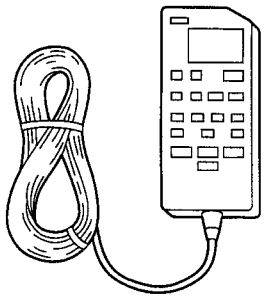
| J-6020-250-A | Color Bar Chart |
|---|---|

• For color adjustment



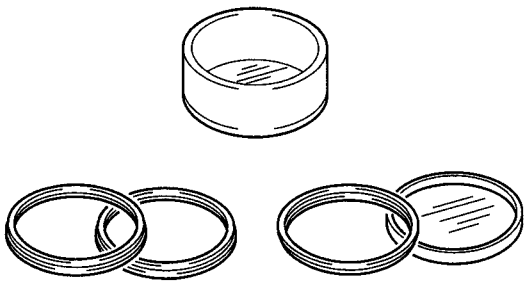

| J-6082-053-B | Camera Adjustment Commander |
|---|---|

• RM-95 partly converted



| J-6080-058-A | Color Temperature Correction Filter C14 |
|---|---|

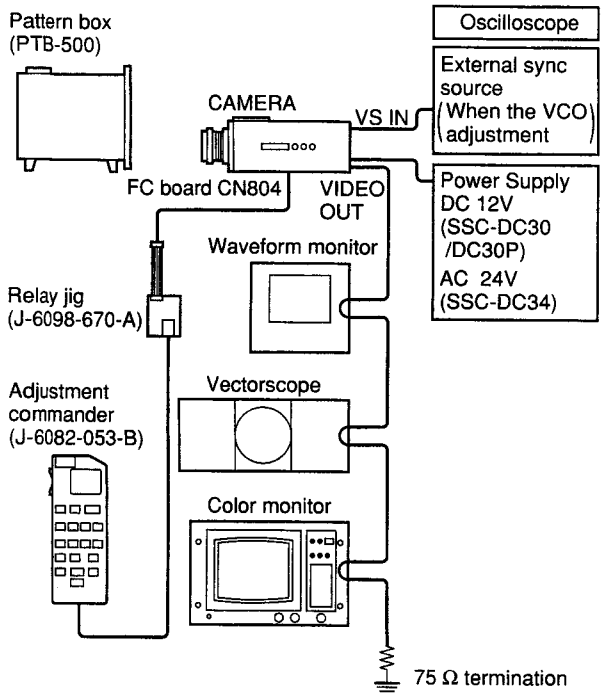
• For the confirmation after the adjustment



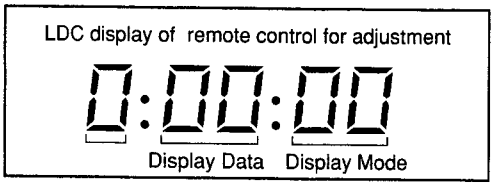
• **ND Filter**
ND25 (25%) 50 by 50 mm square
• Make the transmission factor to 6.25% with double ND filter.

• Oscilloscope
• Digital Voltmeter
• Vectorscope
• Waveform Monitor
• Color Monitor

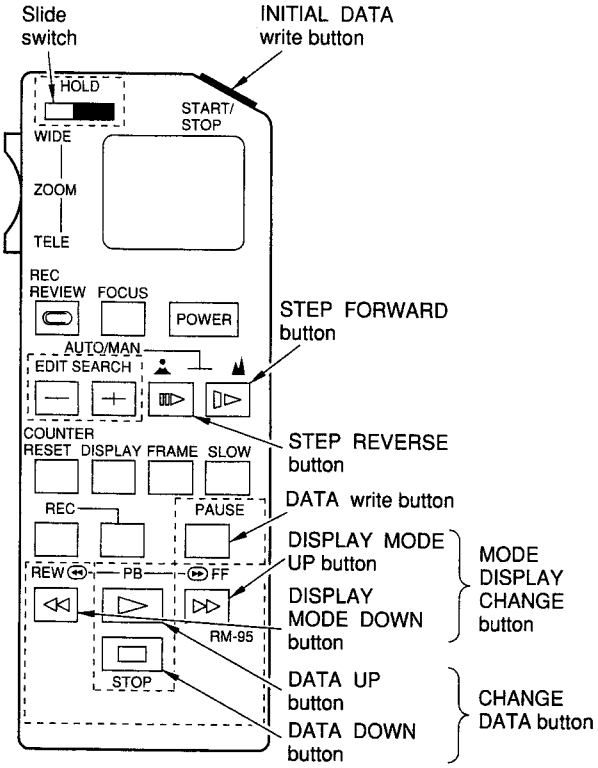
### 4-1-2. Connection for Adjustment




### 4-1-3. Adjustment Commander

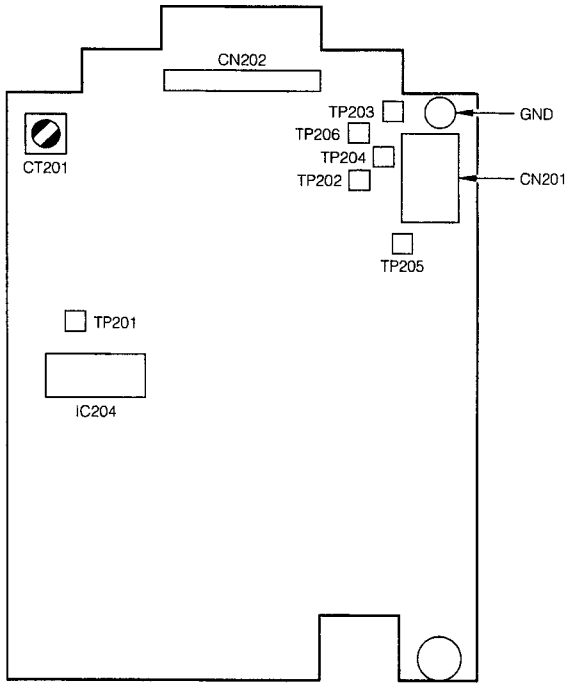



Remote control for adjustment
RM-95 (J-6082-053-B)



### 4-1-4. Terminals to Determine Signals for Adjustment

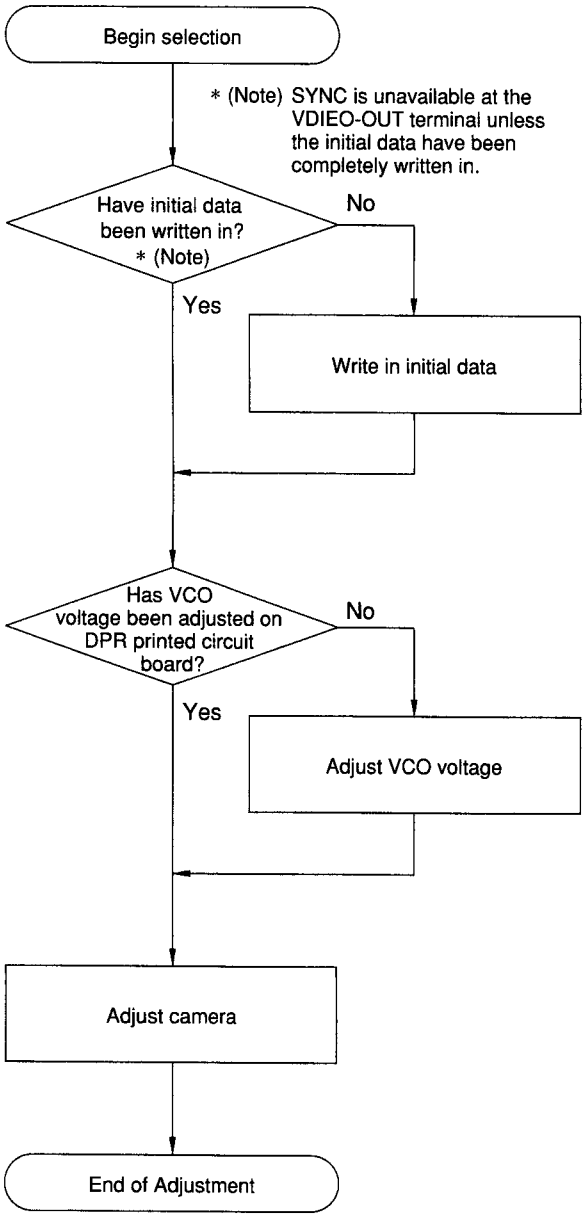
The signals required for adjustment are available at the test pins on Side B of the DPR printed circuit board, which can be seen at the top when the upper camera housing is opened.




**DPR-34 Board**
– B SIDE –

TP201 : VCO
TP202 : CS OUT
TP203 : PG
TP204 : V SUB
TP205 : A/D IN
TP206 : IRIS OUT

### 4-1-5. Chart to Select Items Requiring Adjustment


Begin selection
* (Note) SYNC is unavailable at the VDIEO-OUT terminal unless the initial data have been completely written in.
Have initial data been written in? * (Note)
No
Yes
Write in initial data
Has VCO voltage been adjusted on DPR printed circuit board?
No
Yes
Adjust VCO voltage
Adjust camera
End of Adjustment

## 4-2. ADJUSTMENT METHOD

### 4-2-1. Preparations for Adjustment

(1) Setting switches:
- Throw the AGC and CCD-IRIS switches on the side of the camera to their OFF positions.
- Turn the SHUTTER SPEED on the side of the camera to the "0" position.
- Throw the WHT BAL switch on the rear panel of the camera to the AWB position.
- Slide the sliding switch (HOLD) in the upper part of the commander to the right side.
- Set the MODE switch on the camera rear panel to the B position. (SSC-DC30/DC30P)
  Set the SYNC switch on the camera rear panel to the INT position. (SSC-DC34)

(2) Turn on the camera.
* Set the condition to close the lens opening at the start.
* In this stage, the initial data must already have been written in to the FC printed circuit board. If not, SYNC is unavailable at the VIDEO-OUT terminal.

(3) Check the power supply for startup.

| Subject | Free |
|---|---|
| Equipment | Digital Voltmeter |
| DC 5 V Check | |
| Measurement point | PSW Board P401-7 Pin |
| Specification | 5 ± 0.3 V |
| DC 9 V Check | |
| Measurement point | PSW Board P401-6 Pin |
| Specification | 9 ± 0.7 V |
| DC 24 V Check | |
| Measurement point | PSW Board P401-5 Pin |
| Specification | 24 ± 0.6 V |

* In this stage, if the power supply was not started up as rated, there is an abnormality somewhere in the circuit. Do not proceed to adjustment before correcting the abnormality.

(4) Connecting the Commander:
Use a relay jig to connect the commander to the connector (CN804) on the FC printed circuit board so that the relay jig will have Pin 1 (white) coincide with Pin 1 (on the rear panel side) of the connector.

For the SSC-DC30P only, perform Operations (5) and (6) below.

(5) Press the MODE DISPLAY CHANGE button on the commander to display Mode "27". Subsequently, press the CHANGE DATA button to display Data "A0".

(6) Press the MODE DISPLAY CHANGE button on the commander to display Mode "59". Subsequently, press the CHANGE DATA button to display Data "1E".

| Subject | Unnecessary |
|---|---|
| Measurement point | Nothing |

### 4-2-2. Writing in Initial Data

(1) Press the START/STOP button in the upper part of the commander.

(2) The numerals indicated on the LCD of the commander will go out for a few seconds and then will reappear. At the same time, a video signal will be outputted at the VIDEO-OUT terminal.
* In this stage, if the commander's LCD display remains out and cannot be restored or no video signal is outputted, there is an abnormality somewhere in the circuitry. Do not proceed to adjustment without correcting the abnormality.

(3) Press the MODE DISPLAY CHANGE button on the commander to display Mode "48". Subsequently, press the CHANGE DATA button to display Data "10" (NTSC) or "0d" (PAL).

## 4-3. ADJUSTMENT THE VCO

(1) Adjust the VCO in accordance with the procedure in the table below.

| Subject | | Unnecessary |
|---|---|---|
| Equipment | | Oscilloscope (DC 500 mV, 0.2 µS) |
| Measurement point | | DPR Board TP201 |
| Adjustment point | | DPR Board CT201 |
| Adjustment value | | 2.9 ± 0.1 V |
| Adjustment procedures | SSC-DC30 /DC30P | Input external sync signal to VS-IN and conduct adjustment. |
| | SSC-DC34 | Throw the SYNC switch to "LL" position. |

(2) Upon completion of VCO adjustment, turn the SYNC switch on the camera rear panel to the INT position. (SSC-DC34)

## 4-4. CAMERA ADJUSTMENT

### 4-4-1. Setting up the Prepare for Adjustment Mode

① Press the MODE DISPLAY CHANGE button on the commander to display Mode "5F". Subsequently, press the CHANGE DATA button to display Data "01".

② Press the MODE DISPLAY CHANGE button on the commander to display Mode "61". Subsequently, press the CHANGE DATA button to display Data "01".

| Subject | Unnecessary |
|---|---|
| Measurement point | Nothing |

③ [Altering Data for Camera]
Press the MODE DISPLAY CHANGE button on the commander to display Mode "48". Make sure that the mode indicator should still displays "10" (NTSC) or "0d" (PAL). If the LCD indicator does not displays it, press the CHANGE DATA button to display Data "10" (NTSC) or "0d" (PAL).

[Altering Data for PAL Type Camera]
For the SSC-DC30P only, perform Operations ④ and ⑤ below.

④ Press the MODE DISPLAY CHANGE button on the commander to display Mode "27". Make sure that the indicator should still displays "A0". If the LCD indicator does not displays it, press the CHANGE DATA button to display Data "A0".

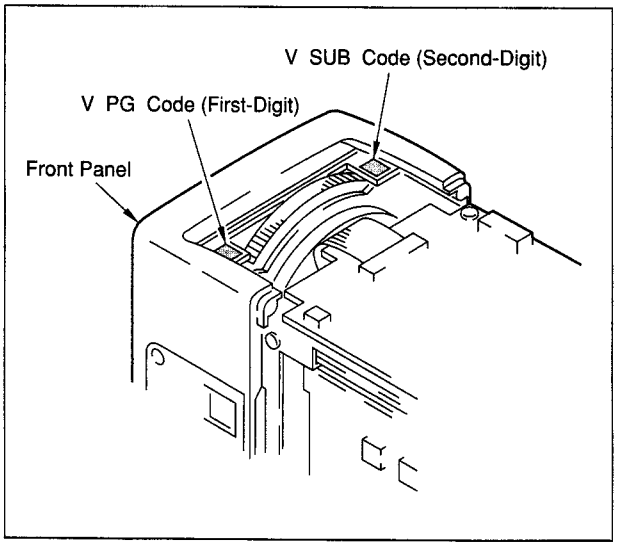
⑤ Press the MODE DISPLAY CHANGE button on the commander to display Mode "59". Make sure that the indicator should still displays "1E". If the LCD indicator does not displays it, press the CHANGE DATA button to display Data "1E".

| Subject | Unnecessary |
|---|---|
| Measurement point | Nothing |

### 4-4-2. Adjusting VSUB and VPG

VPG and VSUB Set Values
The set values inherent to the CCD camera element employed are required for this adjustment.
A set value is indicated as a two-digit code on the back of the CCD camera element.
The code has also been transcribed on the front panel.
If the CCD camera element has not been replaced, refer to the code transcribed on the front panel and carry out the adjustment.
If the CCD camera element has been replaced, do not fail to correct the code indicated on the front panel to the one indicated on the back of the new CCD camera element.

Code · · · indicated in two digits : □ □
↑ ↑
VPG code VSUB code



**Adjusting the V SUB**

① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change to "29".

② Press the CHANGE DATA button so that a determined voltage will fall within a range of standard values.

| Subject | Free |
|---|---|
| Measurement point | DPR Board TP204 (V-SUB) |
| Equipment | Digital Voltmeter (DC Voltage) |
| Display Mode | 29 |
| Specification | (V SUB Set Values) ± 0.25 V |

**V SUB Set Value**

| CODE (second-digit) | V SUB (V) | CODE (second-digit) | V SUB (V) |
|---|---|---|---|
| A | 16.0 | N | 22.0 |
| B | 16.5 | P | 22.5 |
| C | 17.0 | Q | 23.0 |
| D | 17.5 | R | 23.5 |
| E | 18.0 | S | 24.0 |
| F | 18.5 | T | 24.5 |
| G | 19.0 | U | 25.0 |
| H | 19.5 | V | 25.5 |
| J | 20.0 | W | 26.0 |
| K | 20.5 | X | 26.5 |
| L | 21.0 | Y | 27.0 |
| M | 21.5 | Z | 27.5 |

**Adjusting the VPG**

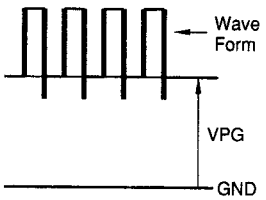
① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change over to "2A".

② Press the CHANGE DATA button so that the determined voltage will fall within the standard range.

| Subject | Free |
|---|---|
| Measurement point | DPR Board TP203 (PG) |
| Equipment | Oscilloscope (DC 2 V, 0.2 µs) |
| Display Mode | 2 A |
| Specification | (V PG Set Values) ± 0.25 V |

**V PG Set Value**

| CODE (first-digit) | V PG (V) |
|---|---|
| 1 | 10.0 |
| 2 | 10.5 |
| 3 | 11.0 |
| 4 | 11.5 |
| 5 | 12.0 |
| 6 | 12.5 |
| 7 | 13.0 |



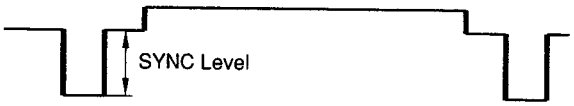

**4-4-3. Adjusting the SYNC Level**

① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change to "2B".

② Close the lens opening.

③ Press the CHANGE DATA button so that the determined voltage will fall within the standard range.

| Subject | Free |
|---|---|
| Measurement point | SYNC level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Display Mode | 2 B |
| Specification | 40 ± 4 IRE (NTSC)<br>286 ± 30 mV (PAL) |
| Lens opening | Close |

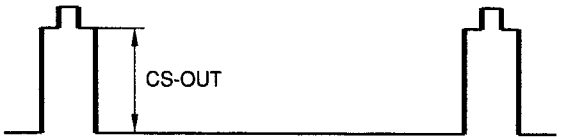


### 4-4-4. Adjusting OdB

① Press the STEP FORWARD button on the commander once. As a result, the displayed mode will change to "5A".

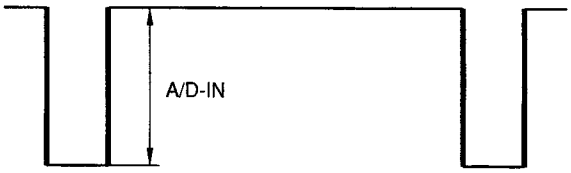
② Photographing an all white pattern, use the lens opening to set the CS-OUT (TP202) to 200 ± 20mVp-p.

| Subject | All white pattern |
|---|---|
| Measurement point | DPR Board TP202 (CS-OUT) |
| Equipment | Oscilloscope (AC 50 mV, 10 μS) |
| Display Mode | 5 A |
| Specification | 200 ± 20 mV |




③ Press the data change button to ensure the measured voltage is within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | DPR Board TP205 (A/D-IN) |
| Equipment | Oscilloscope (AC 200 mV, 10 μS) |
| Display Mode | 5 A |
| Specification | 860 ± 40 mV |



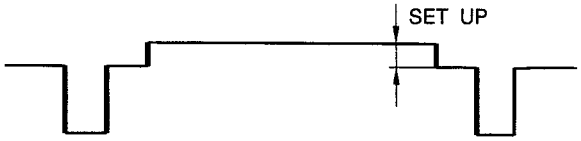

### 4-4-5. SET UP Adjustment

① Press the step forward button of the commander once. The mode indicator will display "00".

② Cover the front of the lens to close it.
*Keep the iris diaphragm at **4-4-4.**②.

③ Press the data change button to ensure the measured voltage is within the specified value range.

| Subject | Cover the front of the lens |
|---|---|
| Measurement point | SET UP level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Display Mode | 00 |
| Specification | 7.0 ± 2.0 IRE (NTSC)<br>20 ± 15 mV (PAL) |



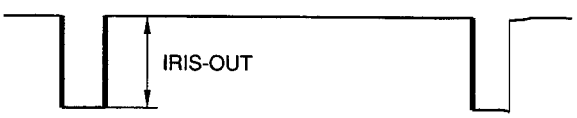

### 4-4-6. Adjustment of Automatic Iris VS Level

① Press the step forward button of the commander once. The mode indicator will display "2D".

② Remove the cover from the front of the lens to put the CS-OUT (TP202) value back to 200 ± 20 mVp - p.

③ Press the data change button to ensure that the measured voltage is within the specified value range.

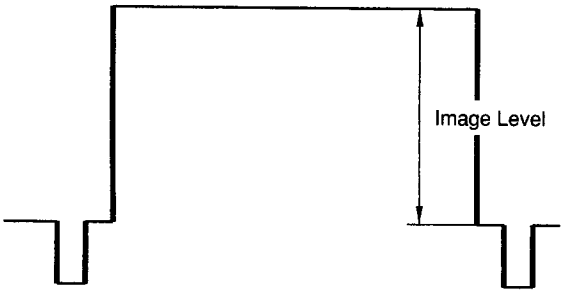
| Subject | All white pattern |
|---|---|
| Measurement point | DPR Board TP206 (IRIS-OUT) |
| Equipment | Oscilloscope (AC 200 mV, 10 μS) |
| Display Mode | 2 D |
| Specification | 1100 ± 40 mV (NTSC)<br>1200 ± 40mV (PAL) |



### 4-4-7. Adjustment of AGC MAX

① Press the step forward button of the commander once. The mode indicator will display "5B".
② Install the ND filter (6.25 %).
*Keep the iris diaphragm at **4-4-6.** .
③ Press the data change button to ensure that the measured voltage is within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | VIDEO OUT image level |
| Equipment | Waveform Monitor |
| Display Mode | 5 B |
| Specification | 65 ± 5 IRE (NTSC)<br>455 ± 35 mV (PAL) |



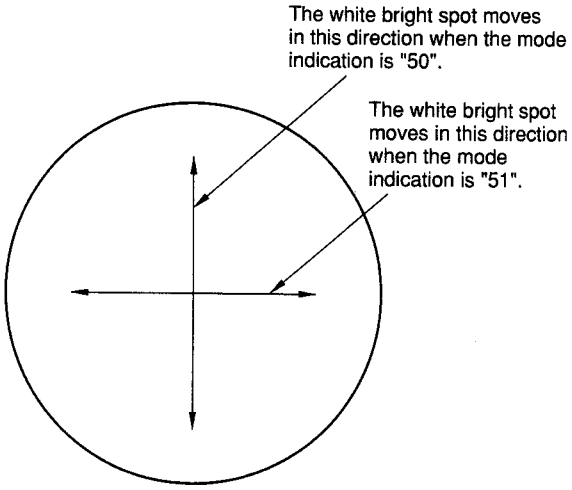

### 4-4-8. Adjustment of WB (3200K preset)

① Press the step forward button of the commander once. The mode indicator will display "50".
② Remove the ND filter. Adjust the iris diaphragm so that the VIDEO-OUT image level is set at 65 ± 3 IRE (NTSC) or 455 ± 20mV (PAL).

| Subject | All white pattern |
|---|---|
| Measurement point | Image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Display Mode | 50 |
| Specification | 65 ± 3 IRE (NTSC)<br>455 ± 20 mV (PAL) |

③ Alternately switch the mode between "50" and "51" by pressing the MODE DISPLAY CHANGE button, and while doing so, press the data change button so that the white bright spot is placed over the origin of the vector scope.

| Subject | All white pattern |
|---|---|
| Measurement point | VIDEO OUT white bright spot |
| Equipment | vectorscope |
| Display Mode | 50, 51 |
| Specification | The white bright spot is placed over the origin of the vectorscope. |


The white bright spot moves in this direction when the mode indication is "50".
The white bright spot moves in this direction when the mode indication is "51".

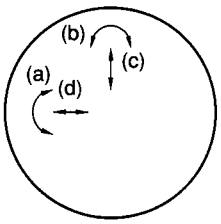
### 4-4-9. Color Reproduction

① Press the step forward button once. The mode indicator will display "03".
② Shoot the color bar chart.
③ Adjust the iris diaphragm so that the VIDEO-OUT white image level is set to 90 ± 2.5 IRE (NTSC) or 630 ± 15 mV (PAL).

| Subject | Color Bar Chart |
|---|---|
| Measurement point | White image level of VIDO OUT |
| Equipment | Waveform Monitor |
| Display Mode | 03 |
| Specification | 90 ± 2.5 IRE (NTSC)<br>630 ± 15 mV (PAL) |

④ Switching the mode between "03", "05", "07", and "09" by pressing the MODE DISPLAY CHANGE button and while doing so, press the data change button so that the center of the bright spot for each color is placed in it's respective reproduction range.

| Subject | Color Bar Chart |
|---|---|
| Measurement point | Respective color bright spot of VIDEO OUT |
| Equipment | Vectorscope |
| Display Mode | 03, 05, 07, 09 |
| Specification | The center of the bright spot for each color is in it's respective reproduction range. |




(a) Moving direction of the bright spot when mode is "03"
(b) Moving direction of the bright spot when mode is "05"
(c) Moving direction of the bright spot when mode is "07"
(d) Moving direction of the bright spot when mode is "09"

### 4-4-10. WB Data Take-in

① Press the commander's step forward button once. The mode indicator will display "63" and the data indicator will displays "02".
② Shoot the all-white pattern.
③ Adjust the iris diaphragm so that the image level of the VIDEO-OUT value is set to 65 ± 3 IRE (NTSC) or 455 ± 20 mV (PAL).

| Subject | All white pattern |
|---|---|
| Measurement point | White image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Display Step | 63 |
| Specification | 65 ± 3 IRE (NTSC)<br>455 ± 20 mV (PAL) |

④ Press the data up button of the commander so that the data indicator displays "03".
⑤ Make sure that the data indicator of the commander automatically displays "FF".
* If the data indicator does not display "FF", there may be a defective part in the circuit. Repair it, then repeat these steps.

### 4-4-11. Data Write

① Press the step forward button of the commander once. The LCD indicator will turn off for a few seconds, then turn on. Make sure that the data indicator displays "00". (The mode indicator should still display "63".)
* If the LCD indicator turns off and does not turns on, or the data indicator does not display "00", there may be a defective part in the circuit. Repair it, then repeat these steps.
**Note:** In this time, do not press the DATA write (PAUSE) button.

## 4-5. AFTER ADJUSTMENT CHECK AND CAMERA FUNCTION CHECK

To check the values after adjustment, remove the commander and the commander junction fixture from the camera. Turn off the camera, then turn it on again before checking.

### 4-5-1. Checking VSUB Voltage Adjustment

Check to see if the measured voltage is within the specified value range.

| Subject | Free |
|---|---|
| Measurement point | DPR Board TP204 (V-SUB) |
| Equipment | Digital Voltmeter (DC Voltage) |
| Specification | (V SUB Set Values) ± 0.25 V |

### 4-5-2. Checking VPG Voltage Adjustment

Check to see if the measured voltage is within the specified value range.

| Subject | Free |
|---|---|
| Measurement point | DPR Board TP203 (V-PG) |
| Equipment | Oscilloscope (DC 2 V, 0.2 µs) |
| Specification | (V PG Set Values) ± 0.25 V |

### 4-5-3. Checking SYNC Level Adjustment

Check to see if the measured voltage is within the specified range.

| Subject | Free |
|---|---|
| Measurement point | SYNC level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 40 ± 4 IRE (NTSC)<br>286 ± 30 mV (PAL) |
| Lens opening | Close |

### 4-5-4. Checking 0 db Adjustment

① Turn off the AGC and CCD-IRIS switches on the side of the camera.

② Shoot the all-white pattern and adjust the iris diaphragm so that the CS-OUT value (TP202) is set to the specified value.

| Subject | All white pattern |
|---|---|
| Measurement point | DPR Board TP202 (CS-OUT) |
| Equipment | Oscilloscope (AC 50 mV, 10 µs) |
| Specification | 200 ± 20 mV |

③ Check to see if the AD/-IN value (TP205) is within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | DPR Board TP205 (A/D-IN) |
| Equipment | Oscilloscope (AC 200 mV, 10 µs) |
| Specification | 860 ± 40 mV |

*If there is a point where specified value for step ③ is satisfied while varying the iris diaphragm within the specified value range for step ②, the adjustment is correct.

### 4-5-5. Checking SET UP Adjustment

① Turn off the AGC switch on the side of the camera.

② Check to see if the measured voltage is within the specified value range.

| Subject | Free |
|---|---|
| Measurement point | SET UP level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 7.0 ± 2.0 IRE (NTSC)<br>20 ± 15 mV (PAL) |
| Lens opening | Close |

### 4-5-6. Checking AGC MAX Adjustment

① Turn off the AGC and CCD-IRIS switches on the side of the camera.

② Shoot the all-white pattern and adjust the iris diaphragm so that the VIDEO-OUT image level is set to the specified value.

| Subject | All white pattern |
|---|---|
| Measurement point | Image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 100 ± 2 IRE (NTSC)<br>700 ± 15 mV (PAL) |

③ Set the ND filter (transmission factor: 6.25%).

④ Turn on the AGC switch on the side of the camera.

⑤ Shoot the all-white pattern. Check to see if the VIDEO-OUT image level is within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | Image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 65 ± 5 IRE (NTSC)<br>455 ± 35 mV (PAL) |

*If there is a point where the specified value for step ⑤ is satisfied while varying the iris diaphragm within the specified value range for step ②, the adjustment is correct.

## 4-5-7. Checking WB adjustment (3200K preset and data take-in)

### Checking AWB operation

① Set the WB switch on the camera rear panel to the AWB position. Turn off the AGC and CCD-IRIS switches on the side of the camera.
② Set the C14 filter.
③ Shoot the all-white pattern. Adjust the iris diaphragm so that the VIDEO-OUT image level is set within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | Image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 65 ± 3 IRE (NTSC)<br>455 ± 20 mV (PAL) |

④ Check to see if the white bright spot on the vector scope converges to meet the specified value.

| Subject | | All white pattern |
|---|---|---|
| Measurement point | | White bright spot of VIDEO OUT |
| Equipment | | Vectorscope |
| Specification | Convergence time | Within 3 seconds |
| | Convergence spot | Within a radius of 10% of the vector scope's diameter of the origin (Suppose the vectorscope's diameter is 100%.) |

⑤ Remove the C14 filter and perform step ③ and step ④.

### Checking ATW operation

① Set the WB switch on the camera rear panel to the ATW position.
② Set the C14 filter.
③ Shoot the all-white pattern. Adjust the iris diaphragm so that the VIDEO-OUT image level is set within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | Image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 65 ± 3 IRE (NTSC)<br>455 ± 20 mV (PAL) |

④ Check to see if the white bright spot on the vector scope converges to meet the specified value.

| Subject | | All white pattern |
|---|---|---|
| Measurement point | | White bright spot of VIDEO OUT |
| Equipment | | Vectorscope |
| Specification | Convergence time | Within 30 seconds |
| | Convergence spot | Within a radius of 10% of the vector scope's diameter of the origin (Suppose the vectorscope's diameter is 100%.) |

⑤ Remove the C14 filter and perform step ③ and step ④.

### 4-5-8. Checking Color Reproduction Adjustment

① Turn off the AGC and CCD-IRIS switches on the side of the camera.
② Shoot the color bar chart.
③ Adjust the iris diaphragm so that the VIDEO-OUT white image level is set within the specified value range.

| Subject | Color Bar Chart |
|---|---|
| Measurement point | White image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 90 ± 2.5 IRE (NTSC)<br>630 ± 15 mV (PAL) |

④ Check to see if the center of the bright spot of each of the colors is within the color reproduction range.

| Subject | Color Bar Chart |
|---|---|
| Measurement point | Respective color bright spot of VIDEO OUT |
| Equipment | Vectorscope |
| Specification | The center of the bright spot of every colors is within their respective reproduction range. |

*If there is a point where the specified value for step ④ is satisfied while varying the iris diaphragm within the specified value range for step ③, the adjustment is correct.

### 4-5-9. Checking CCD-IRIS Operation

① Turn the CCD-IRIS switch on the side of the camera.
② Open the iris diaphragm.
③ Shoot the all-white pattern. Check to see if the white image level is within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | White image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 75 ± 10 IRE (NTSC)<br>525 ± 70 mV (PAL) |

### 4-5-10. Checking Electronic Shutter Operation

① Turn off the AGC and CCD-IRIS switches on the side of the camera.
② Shoot the all-white pattern.
③ Turn the electronic shutter rotary switch on the side of the camera from the "0" to "7" position stepwise. Check to see if the VIDEO-OUT white image level drops accordingly.

| Subject | All white pattern |
|---|---|
| Measurement point | Image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Lens opening | Open the iris diaphragm to the extend that image level can be easily checked on the waveform monitor. |

④ After checking, turn the electronic shutter switch to the "0" position.

### 4-5-11. Checking VS Lock/Line Lock Operation

For the SSC-DC30/DC30P, check the VS lock operation.
For the SSC-DC34, check the line lock operation.

(1) Checking VS lock operation
Input the VS signal. Check to see if the synchronization takes place correctly.
(2) Checking line lock operation
Set the mode switch on the camera rear panel to the "LL" position. Check to see if the synchronization takes place correctly.

### 4-5-12. Checking VS Level Adjustment of Automatic Iris Lens

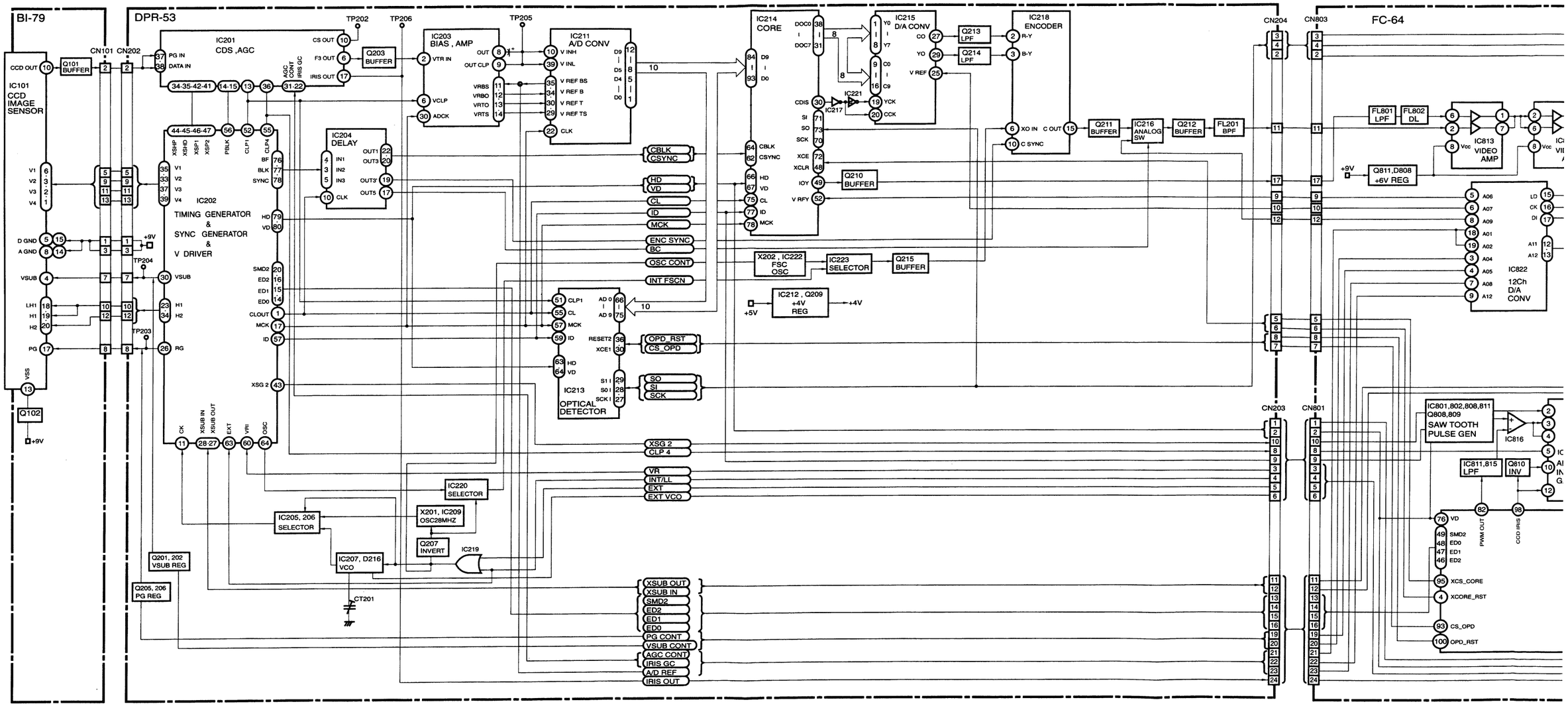
① Turn on the AGC switch on the side of the camera. Turn off the CCD-IRIS switch.
② Set the automatic iris lens switch to the DC position. Install the DC servo lens.
③ Shoot the all-white pattern. Check to see if the VIDEO-OUT image level is within the specified value range.

| Subject | All white pattern |
|---|---|
| Measurement point | Image level of VIDEO OUT |
| Equipment | Waveform Monitor |
| Specification | 65 ± 10 IRE (NTSC)<br>455 ± 70 mV (PAL) |

**NOTE:** When the lens replacement, be sure to set the camera power off.

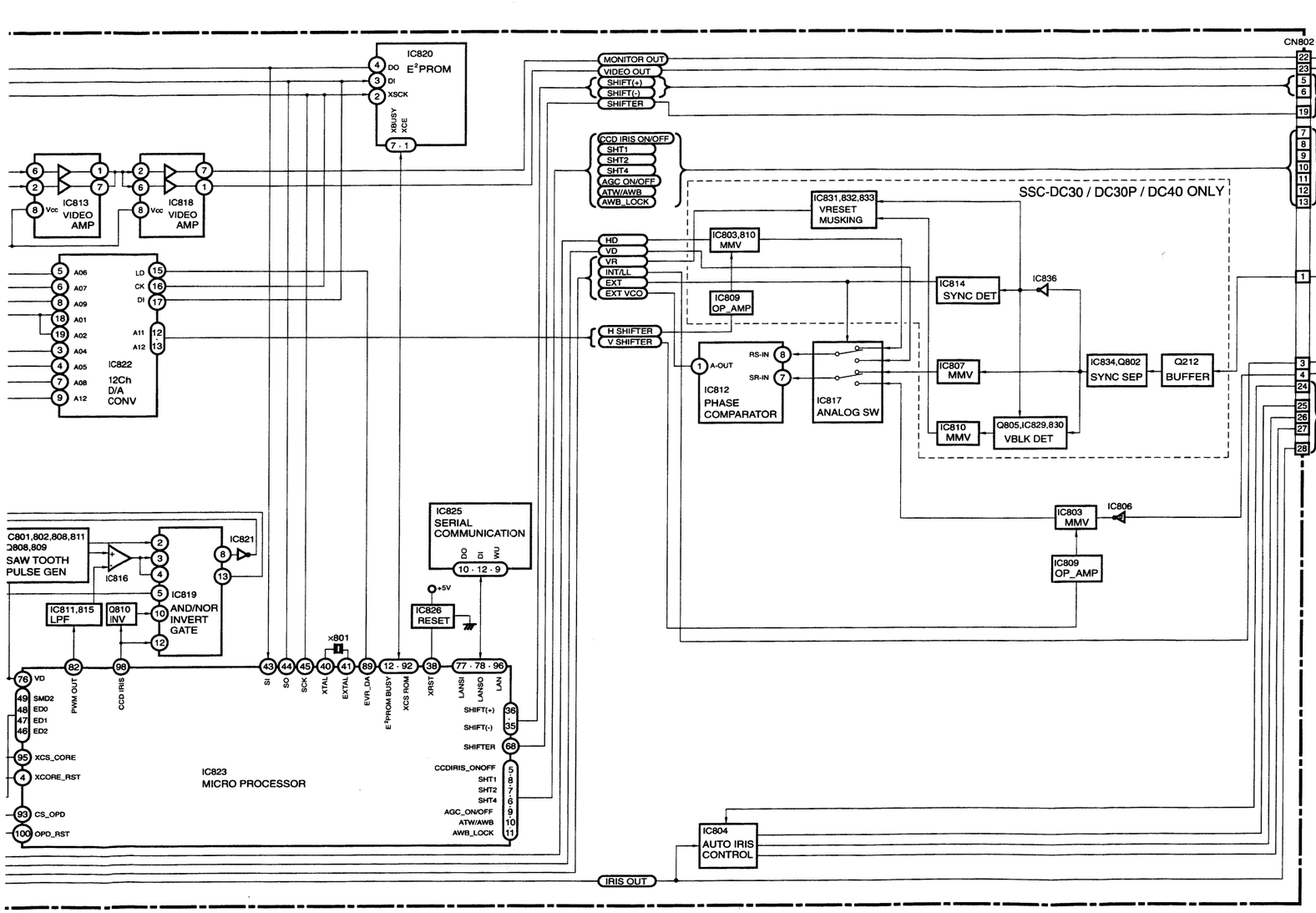
# SECTION 5
# DIAGRAMS

## 5-1. BLOCK DIAGRAM






5 - 1


IC820
E²PROM
DO
DI
XSCK
XBUSY
XCE
IC813
VIDEO AMP
IC818
VIDEO AMP
IC822
12Ch D/A CONV
MONITOR OUT
VIDEO OUT
SHIFT(+)
SHIFT(-)
SHIFTER
CCD IRIS ON/OFF
SHT1
SHT2
SHT4
AGC ON/OFF
ATW/AWB
AWB_LOCK
HD
VD
VR
INT/LL
EXT
EXT VCO
H SHIFTER
V SHIFTER
SSC-DC30 / DC30P / DC40 ONLY
IC831,832,833
VRESET MUSKING
IC803,810
MMV
IC809
OP_AMP
IC814
SYNC DET
IC836
IC807
MMV
IC834,Q802
SYNC SEP
Q212
BUFFER
IC810
MMV
Q805,IC829,830
VBLK DET
IC812
PHASE COMPARATOR
IC817
ANALOG SW
IC803
MMV
IC806
IC809
OP_AMP
IC825
SERIAL COMMUNICATION
IC826
RESET
IC821
IC816
IC819
AND/NOR INVERT GATE
IC811,815
LPF
Q810
INV
IC823
MICRO PROCESSOR
IC804
AUTO IRIS CONTROL
IRIS OUT
CN802
SSC-DC30 / DC30P / DC40
CN402
IC401
PSW-26
Q404,407
OVERLAY SYNC SEP
CN403
CN501
CT-143
F501
CN502
DC12V
SW501
H PHASE +
SW502
H PHASE -
SW504
WHT BAL
SW503
AWB LOCK
SW506
MODE B (INT)
MODE A (OVERLAY)
SW505
DC 12V
CN503
A MONITOR OUT
B VS IN
CN504
A VIDEO OUT
DC IN, VS IN
B VIDEO OUT
SHUTTER SPEED SW403
SW402
CCD IRIS
AGC
Q401,402
REG
P401
DC-DC CONVERTER
D401
D403
Q408,409, Q410,411 IC402,403
PW CTL
AUTO-IRIS
SW401
CN401
CN751
CN752
Q751
REG
LENS
IR-16
SSC-DC34
CN402
PSW-27
CN403
CN601
CT-144
CN602
AC24V
F601
SW601
V PHASE +
SW602
V PHASE -
SW604
WHT BAL
SW603
AWB LOCK
SHUTTER SPEED SW403
SW402
CCD IRIS
AGC
P401
AC-DC CONVERTER
IC401
PHOTO COUPLER
CN603
VIDEO OUT
SW605
SYNC
AUTO-IRIS
SW401
CN401
CN751
CN752
LENS
IR-16

5 - 1

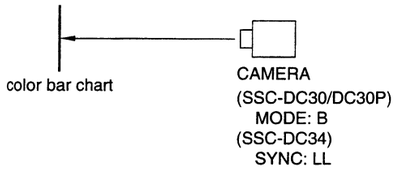
5 - 1

## 5-2. SCHEMATIC DIAGRAMS AND PRINTED CIRCUIT BOARDS

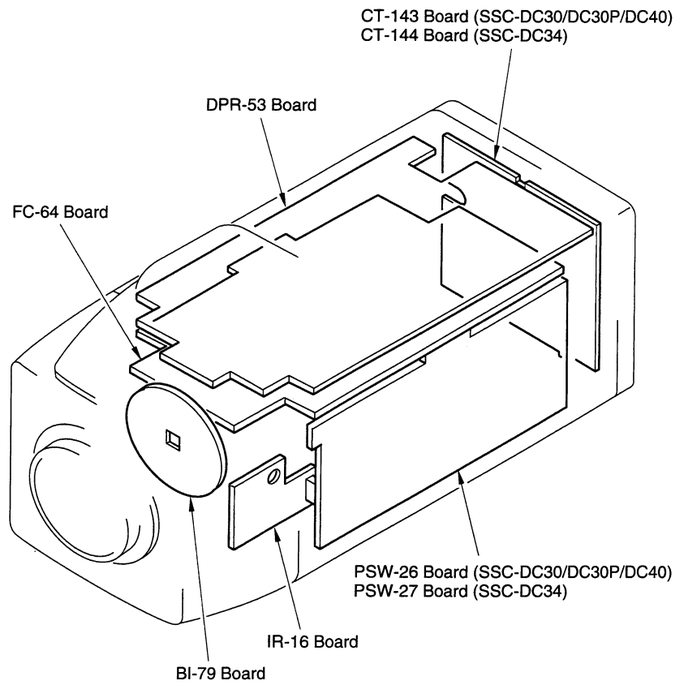
**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

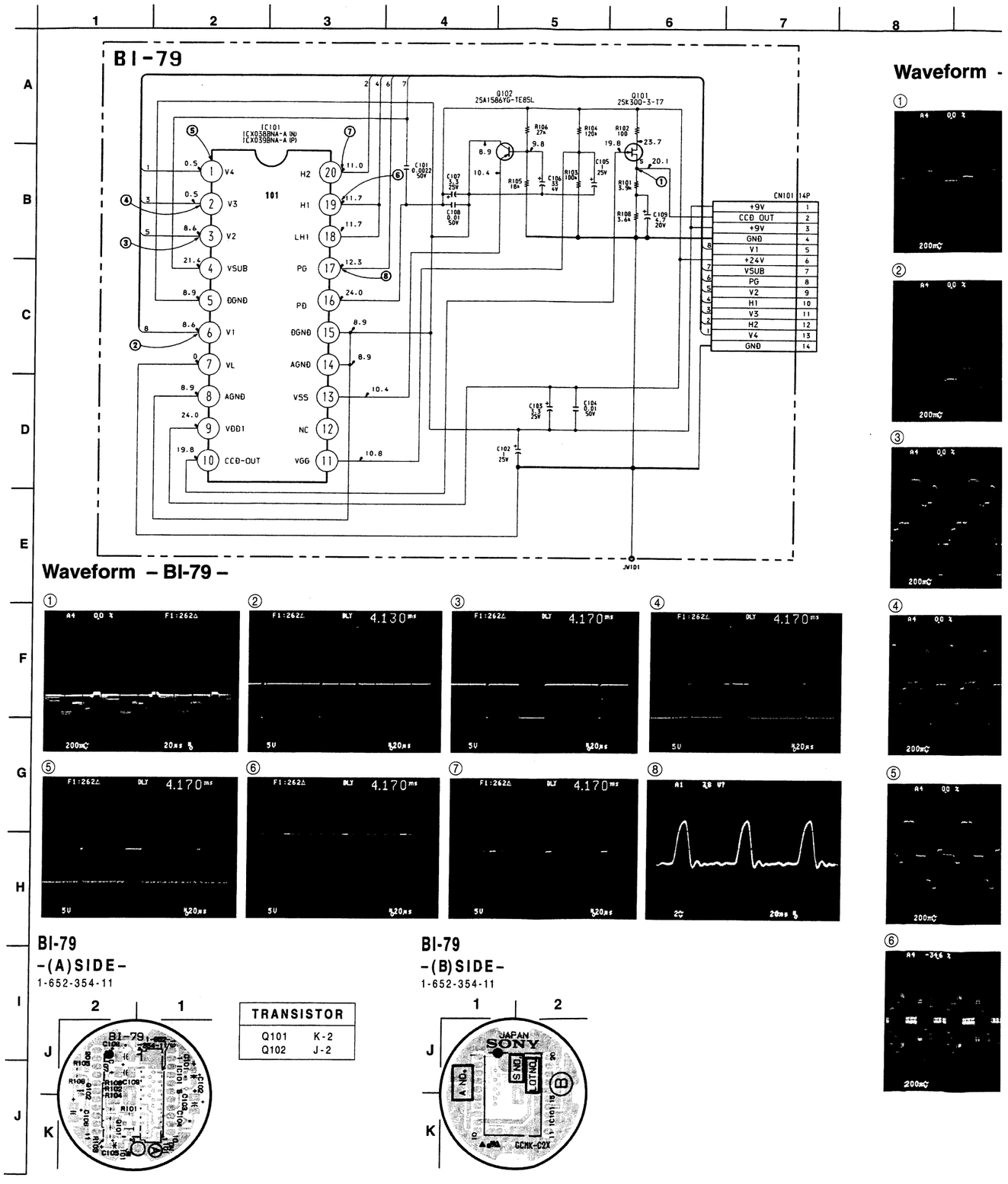
**Note:**

- Readings are taken with a 10 MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- Waveforms are measured in condition below.




### BOARD LOCATION




### Waveform – BI-79 –




### Waveform -



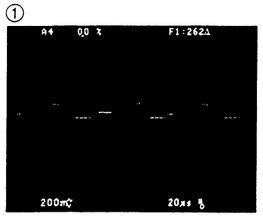

**BI-79**
**-(A)SIDE-**
1-652-354-11

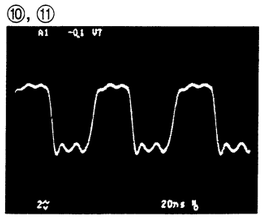


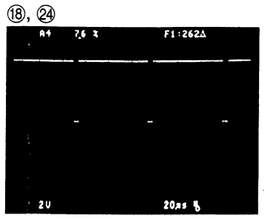
| TRANSISTOR | |
|---|---|
| Q101 | K-2 |
| Q102 | J-2 |

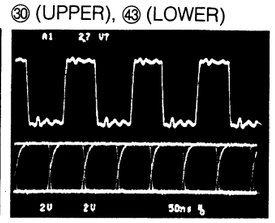
**BI-79**
**-(B)SIDE-**
1-652-354-11

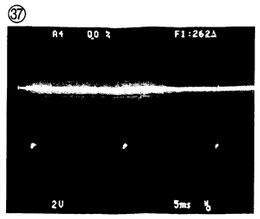
## Waveform – DPR-53 –

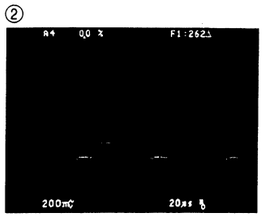
① 

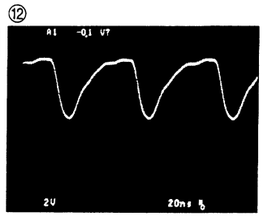
⑩, ⑪ 

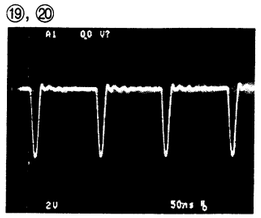
⑱, ㉔ 

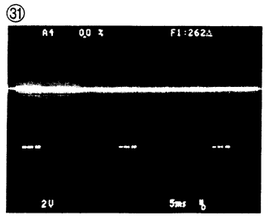
㉚ (UPPER), ㊸ (LOWER) 

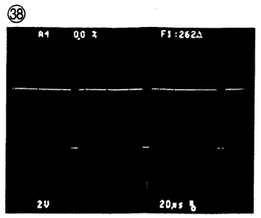
㊲ 

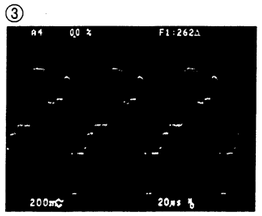
② 

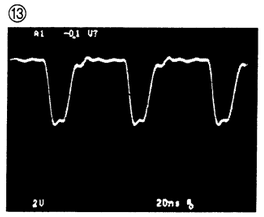
⑫ 

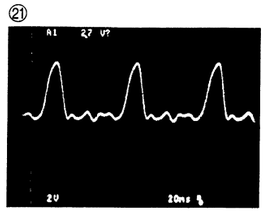
⑲, ⑳ 

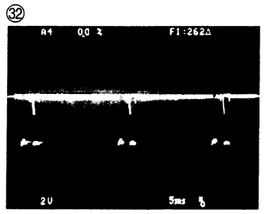
㉛ 

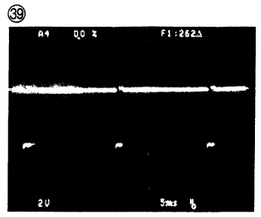
㊳ 

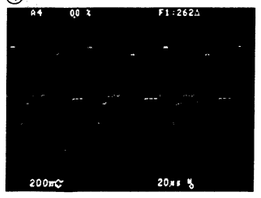
③ 

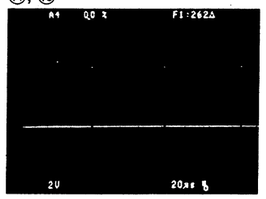
⑬ 

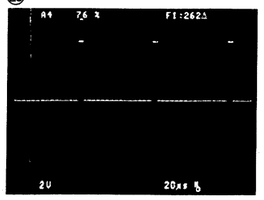
㉑ 

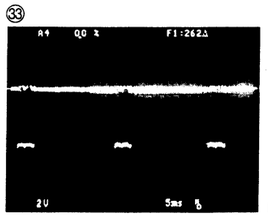
㉜ 

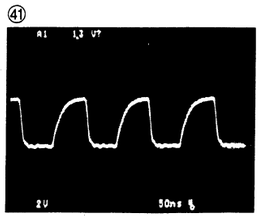
㊴ 

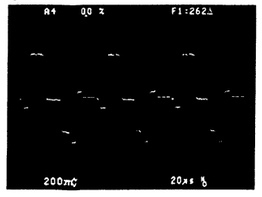
④ 

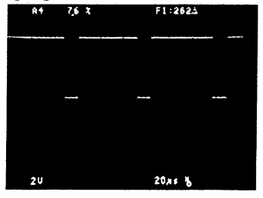
⑭, ⑮ 

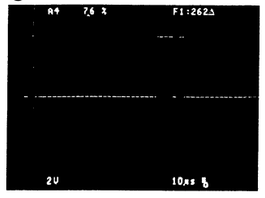
㉓ 

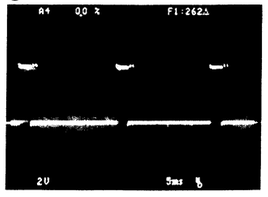
㉝ 

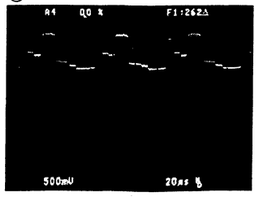
㊶ 

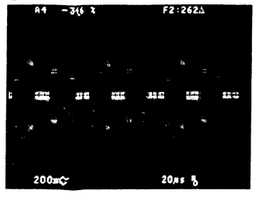
⑤ 

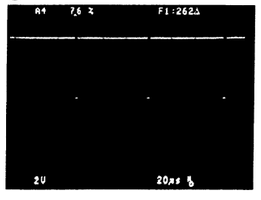
⑯, ㉒ 

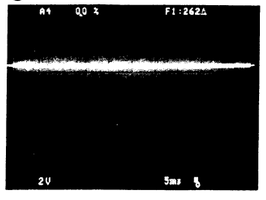
㉕ 

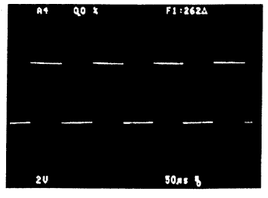
㉞ 

㊷ 

⑥ 

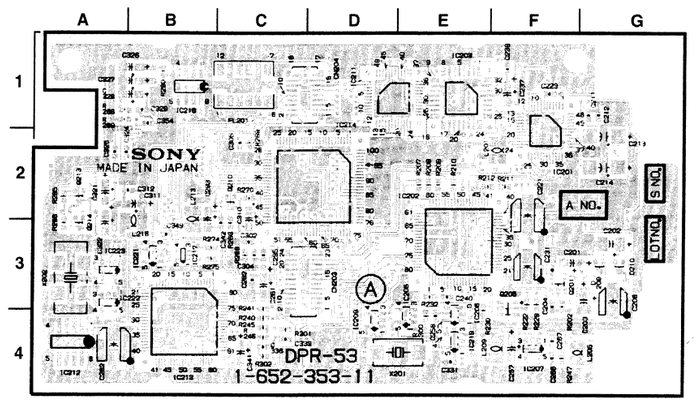
⑰ 

㉗ 

㉟ 



## DPR-53
## -(A)SIDE-
1-652-353-11

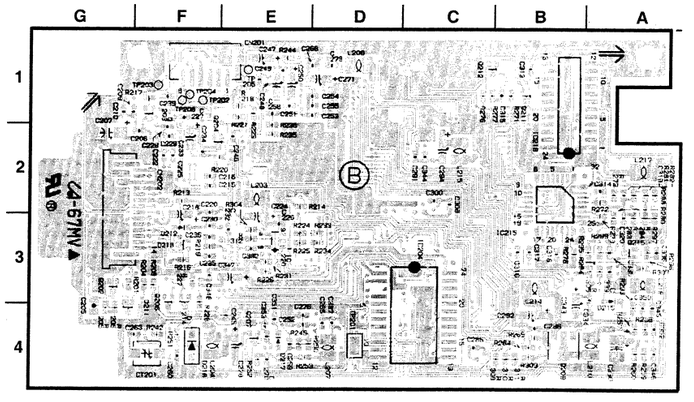



| IC | |
|---|---|
| IC201 | F-2 |
| IC202 | E-1 |
| IC203 | E-1 |
| IC205 | E-3 |
| IC206 | E-4 |
| IC207 | F-4 |
| IC209 | D-4 |
| IC211 | D-1 |
| IC212 | A-4 |
| IC213 | B-4 |
| IC214 | D-1 |
| IC216 | B-1 |
| IC217 | B-3 |
| IC219 | E-4 |
| IC221 | B-3 |
| IC222 | B-3 |
| IC223 | A-3 |

| DIODE | |
|---|---|
| D209 | G-3 |
| D210 | G-3 |

| TRANSISTOR | |
|---|---|
| Q201 | F-3 |
| Q205 | F-3 |
| Q210 | C-2 |
| Q213 | A-2 |
| Q214 | A-3 |

## DPR-53
## -(B)SIDE-
1-652-353-11




| IC | |
|---|---|
| IC204 | C-3 |
| IC215 | B-3 |
| IC218 | B-2 |
| IC220 | E-3 |

| DIODE | |
|---|---|
| D211 | F-3 |
| D212 | F-3 |
| D213 | F-3 |
| D214 | F-4 |
| D215 | A-4 |
| D216 | F-4 |
| D217 | E-4 |

| TRANSISTOR | |
|---|---|
| Q202 | G-3 |
| Q203 | F-1 |
| Q204 | F-2 |
| Q206 | F-3 |
| Q207 | E-4 |
| Q209 | B-4 |
| Q211 | B-1 |
| Q212 | C-1 |
| Q215 | A-3 |



SONY-SP0398 / DRUCK 4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

## DPR-53

CN201 6P

| | |
|---|---|
| 1 | CS OUT |
| 2 | A/D IN |
| 3 | V SUB |
| 4 | GND |
| 5 | PG |
| 6 | IRIS OUT |

CN202 14P

| | |
|---|---|
| 1 | +9V |
| 2 | CCD OUT |
| 3 | +9V |
| 4 | GND |
| 5 | V1 |
| 6 | +24V |
| 7 | V SUB |
| 8 | PG |
| 9 | V2 |
| 10 | H1 |
| 11 | V3 |
| 12 | H2 |
| 13 | V4 |
| 14 | GND |

CN203 24P

| | |
|---|---|
| 1 | HD |
| 2 | VD |
| 3 | VR |
| 4 | INT/LL |
| 5 | EXT |
| 6 | EXT VCO |
| 7 | GND |
| 8 | CLP4 |
| 9 | ID |
| 10 | XSG2 |
| 11 | XSUB OUT |
| 12 | XSUB IN |
| 13 | SMD2 |
| 14 | EDO |
| 15 | ED1 |
| 16 | ED2 |
| 17 | +24V |
| 18 | GND |
| 19 | PG CONT |
| 20 | VSUB CONT |
| 21 | AGC CONT |
| 22 | IRIS GC |
| 23 | A/D REF |
| 24 | IRIS OUT |

TP202 TP205 TP204 TP203 TP206

201 IC201 CXA1390AR-TH

202 IC202 CXD8540R

203 IC203 CXA1359Q-T4

211 IC211 CXA1577R-T4

IC204 CX88835M

IC205 TC7500F-TE85L

IC206 TC7500F-TE85L

IC207 TC7500F-TE85L

IC209 TC75U04F-TE85L

IC212 NJM4558M-T2

IC220 TC7500F-TE85L NTSC

Q201 XN1501-TX

Q202 2SC4116YG-TE85L

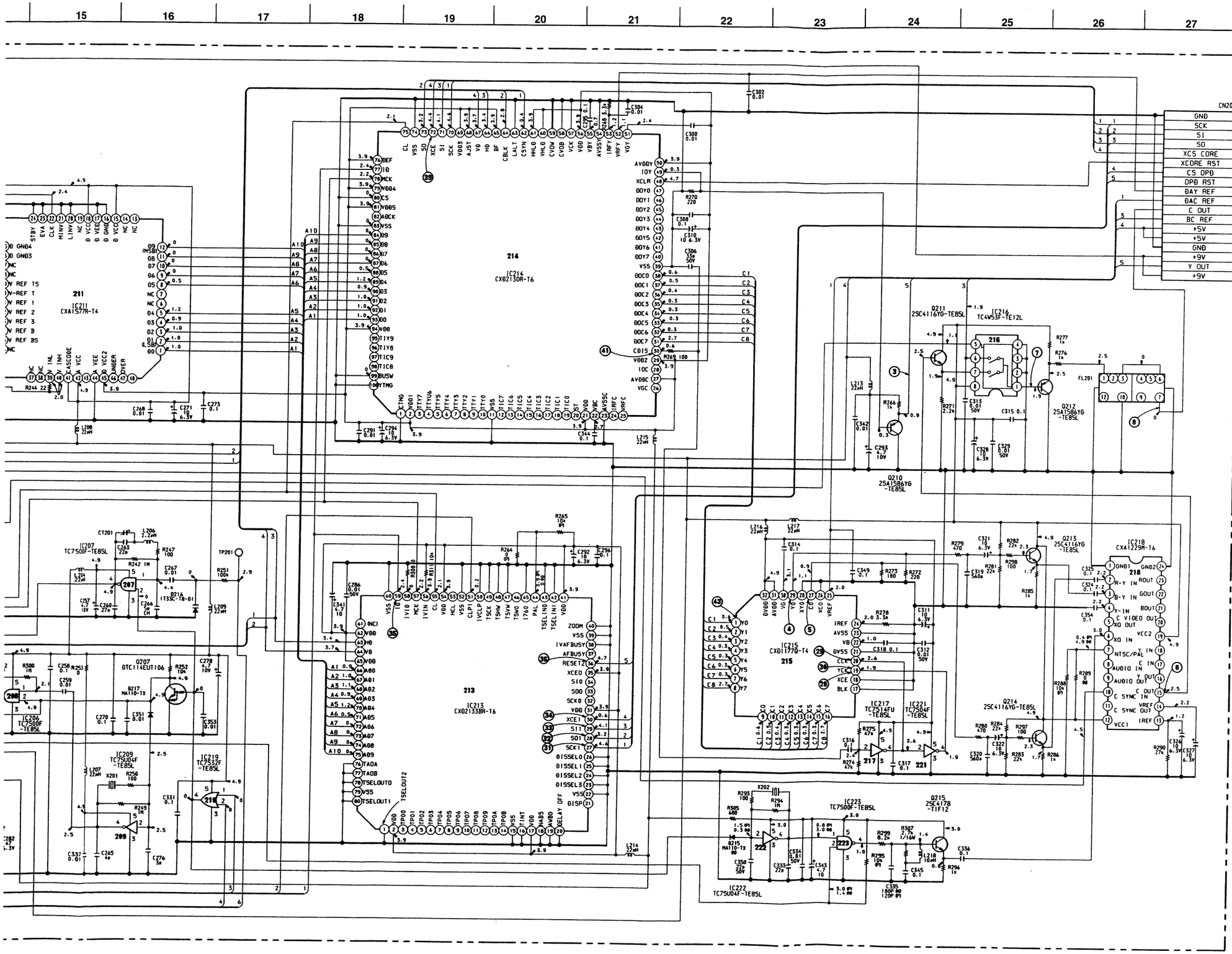
Q203 2SC4116YG-TE85L

Q204 2SC4116YG-TE85L

Q205 XN1501-TX

Q206 2SC4116YG-TE85L

Q209 2SC5617-TTL


IC214
CXD2130R-T6
IC213
CXD2133BR-T6
IC211
CXA1577R-T4
IC207
TC7500F-TE85L
IC206
TC7500F-TE85L
IC209
TC75U04F-TE85L
IC219
TC7532F-TE85L
IC215
CXD1770-T4
IC216
TC4W53F-TE12L
IC217
TC7514FU-TE85L
IC218
CXA1225M-T6
IC221
TC7504F-TE85L
IC222
TC75U04F-TE85L
IC223
TC7500F-TE85L
Q207 DTC114EUT106
Q210 2SA1586YG -TE85L
Q211 2SC4116YG-TE85L
Q212 2SA1586YG -TE85L
Q213 2SC4116YG -TE85L
Q214 2SC4116YG-TE85L
Q215 2SC4178 -T1F12
D216 1T33C-T8-01
CN204 18P
GND 1
SCK 2
SI 3
SO 4
XCS CORE 5
XCORE RST 6
CS OPD 7
OPD RST 8
DAY REF 9
DAC REF 10
C OUT 11
BC REF 12
+5V 13
+5V 14
GND 15
+9V 16
Y OUT 17
+9V 18

5 - 3

5 - 3

# FC-64

SSC-DC34 ONLY

CN801 24P

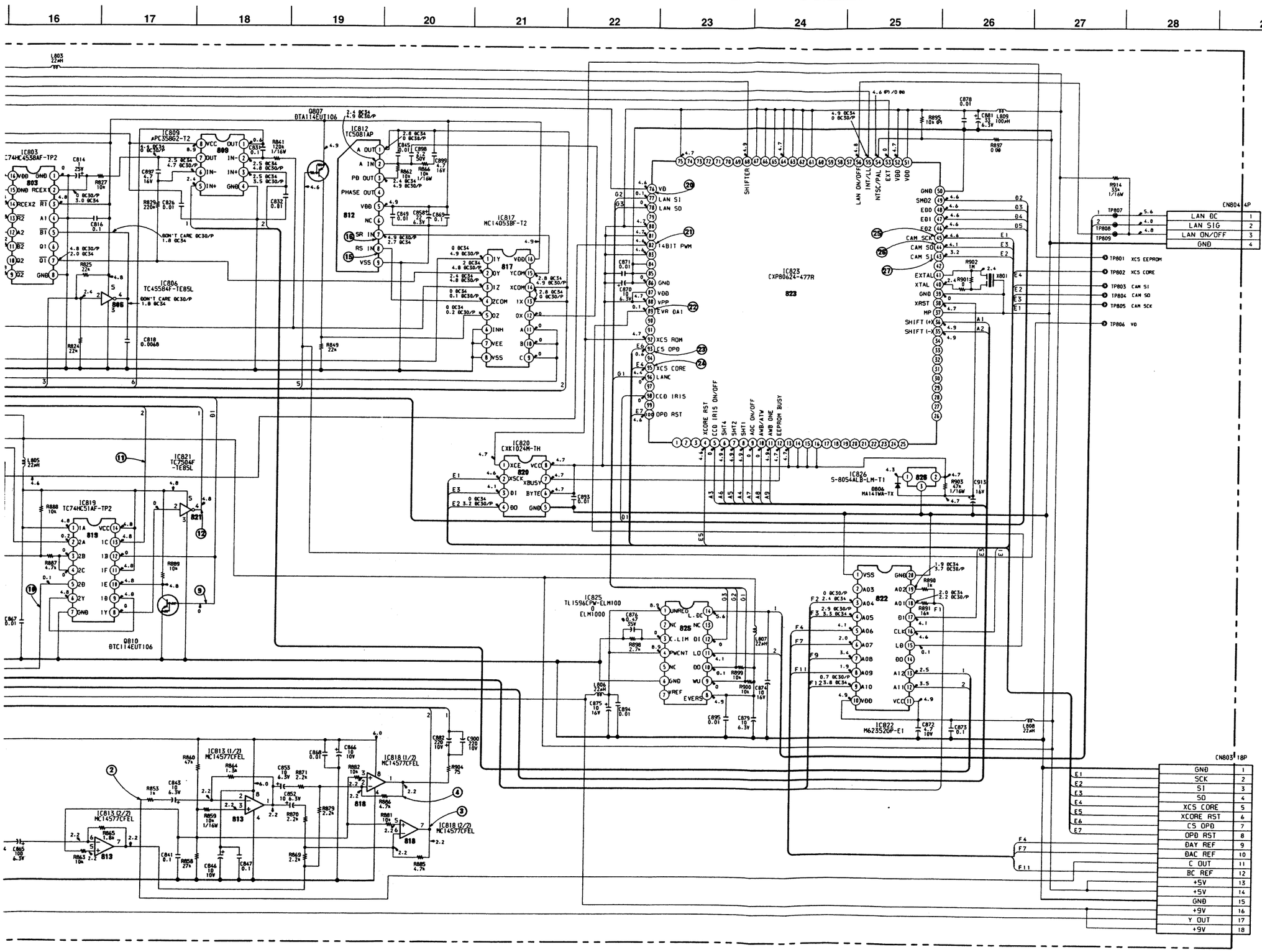
| | |
|---|---|
| 1 | HD |
| 2 | VD |
| 3 | VR |
| 4 | INT/LL |
| 5 | EXT |
| 6 | EXT VCO |
| 7 | GND |
| 8 | CLP4 |
| 9 | ID |
| 10 | XSG2 |
| 11 | XSUB OUT |
| 12 | XSUB IN |
| 13 | SMD2 |
| 14 | ED0 |
| 15 | ED1 |
| 16 | ED2 |
| 17 | +24V |
| 18 | GND |
| 19 | PG CONT |
| 20 | VSUB CONT |
| 21 | AGC CONT |
| 22 | IRIS GC |
| 23 | A/D REF |
| 24 | IRIS OUT |

CN802 28P

| | |
|---|---|
| 1 | EXT VS |
| 2 | GND |
| 3 | INT/LL |
| 4 | V PULSE |
| 5 | SHIFT (+) |
| 6 | SHIFT (-) |
| 7 | CIRIS ON/OFF |
| 8 | SHT1 |
| 9 | SHT2 |
| 10 | SHT4 |
| 11 | AGC ON/OFF |
| 12 | ATW/AWB |
| 13 | AWB LOCK |
| 14 | +5V |
| 15 | +5V |
| 16 | +24V |
| 17 | GND |
| 18 | GND |
| 19 | SHIFTER |
| 20 | +9V |
| 21 | +9V |
| 22 | MONITOR OUT |
| 23 | VIDEO OUT |
| 24 | AI DC |
| 25 | CONT- |
| 26 | CONT+ |
| 27 | DRV+ |
| 28 | VS |



5 - 4


16
17
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20
21
22
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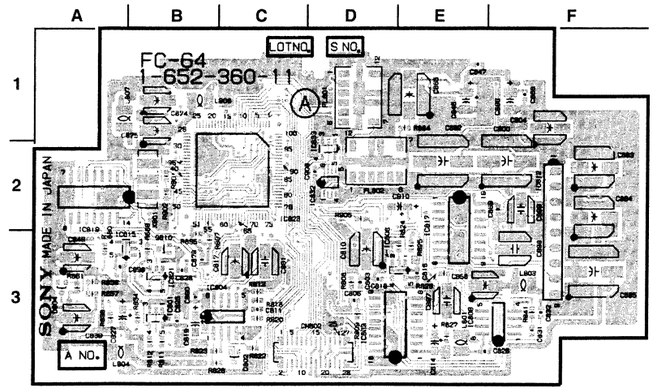
24
25
26
27
28
29
30
IC803 74HC4538AF-TP2
IC809 #PC358G2-T2
IC812 TC5081AP
IC817 MC14053BF-T2
IC806 TC4S584F-TE85L
IC820 CXK1024M-TH
IC821 TC7S04F -TE85L
IC819 TC74HC51AF-TP2
IC825 TL1596CPW-ELM100 ELM1000
IC826 S-80S4ALB-LM-T1
IC822 M62352GP-E1
IC823 CXP80624-477R
Q807 DTA114EUT106
Q810 DTC114EUT106
CN804 4P
LAN DC
LAN SIG
LAN ON/OFF
GND
CN803 18P
GND
SCK
SI
SO
XCS CORE
XCORE RST
CS OPD
OPD RST
DAY REF
DAC REF
C OUT
BC REF
+5V
+5V
GND
+9V
Y OUT
+9V
TP801 XCS EEPROM
TP802 XCS CORE
TP803 CAM SI
TP804 CAM SO
TP805 CAM SCK
TP806 VD
TP807
TP808
TP809



5 - 4

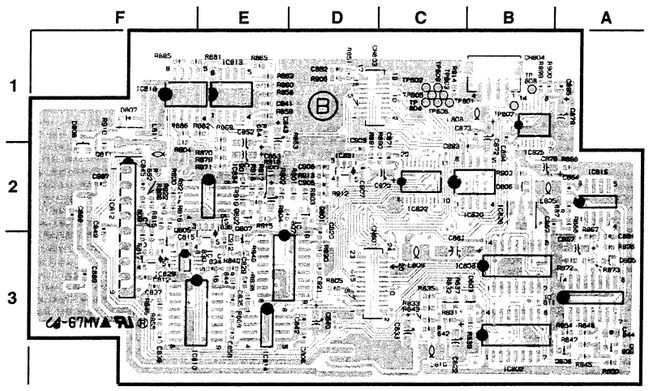
SSC-DC30/DC30P/DC34

## FC-64
## -(A)SIDE-
1-652-360-11



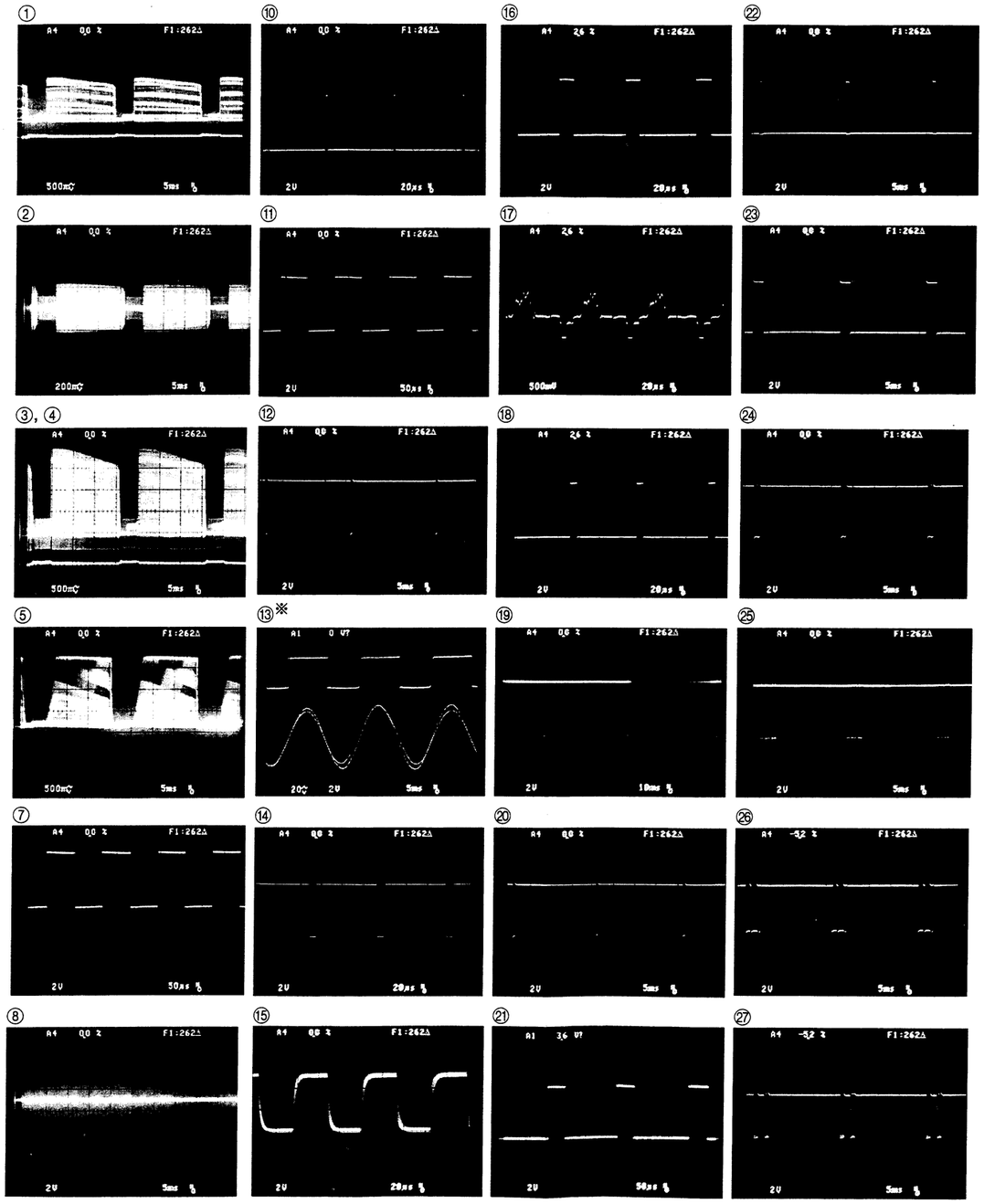

| IC | |
|---|---|
| IC801 | B-3 |
| IC803 | D-3 |
| IC804 | B-3 |
| IC806 | D-3 |
| IC809 | E-3 |
| IC812 | F-2 |
| IC815 | A-3 |
| IC817 | E-2 |
| IC819 | A-2 |
| IC821 | B-3 |
| IC823 | C-2 |
| IC832 | D-2 |
| IC833 | D-2 |
| **DIODE** | |
| D802 | C-3 |
| D804 | A-3 |
| **TRANSISTOR** | |
| Q808 | A-3 |
| Q810 | B-3 |

## FC-64
## -(B)SIDE-
1-652-360-11




| IC | |
|---|---|
| IC802 | B-3 |
| IC807 | D-2 |
| IC808 | B-3 |
| IC810 | E-3 |
| IC811 | A-3 |
| IC813 | E-1 |
| IC814 | E-3 |
| IC816 | A-2 |
| IC818 | F-1 |
| IC820 | B-2 |
| IC822 | C-2 |
| IC823 | C-2 |
| IC825 | B-2 |
| IC826 | B-2 |
| IC829 | F-3 |
| IC830 | E-3 |
| IC831 | D-2 |
| IC834 | E-2 |
| IC836 | E-2 |
| **DIODE** | |
| D803 | B-3 |
| D805 | A-3 |
| D806 | B-2 |
| D807 | F-1 |
| D808 | F-1 |
| **TRANSISTOR** | |
| Q801 | D-2 |
| Q802 | E-2 |
| Q805 | F-2 |
| Q807 | E-2 |
| Q808 | A-3 |
| Q809 | A-3 |
| Q811 | F-2 |

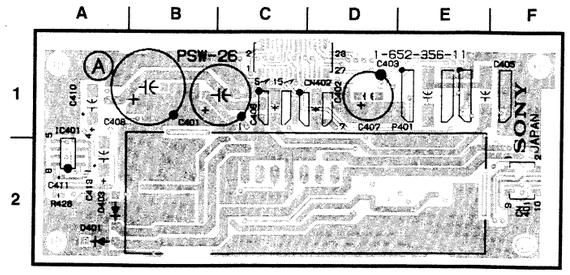
## Waveform – FC-64 –




※: For SSC-DC34

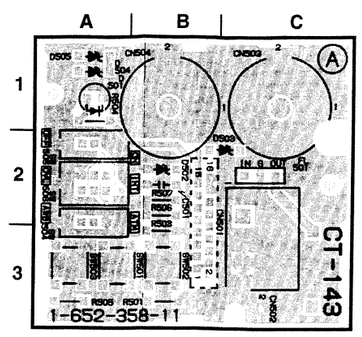

5-5

## PSW-26
### -(A)SIDE-
1-652-356-11



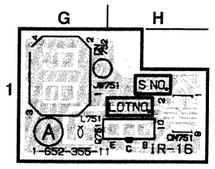

| IC | |
|---|---|
| IC401 | A-1 |
| **DIODE** | |
| D401 | A-2 |
| D403 | A-2 |

## CT-143
### -(A)SIDE-
1-652-358-11



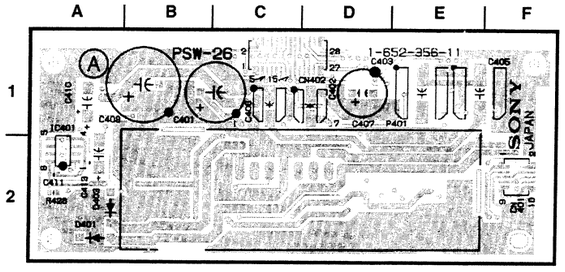

| DIODE | |
|---|---|
| D501 | A-1 |
| D502 | B-2 |
| D503 | C-2 |
| D504 | A-1 |
| D505 | A-1 |

## IR-16
### -(A)SIDE-
1-652-355-11



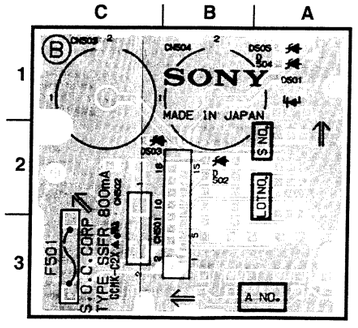

| TRANSISTOR | |
|---|---|
| Q751 | H-1 |

## PSW-26
### -(B)SIDE-
1-652-356-11

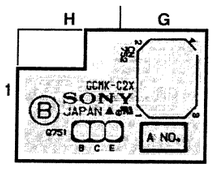



| IC | |
|---|---|
| IC402 | C-2 |
| IC403 | C-2 |
| **DIODE** | |
| D402 | B-2 |
| D404 | A-2 |
| D405 | A-2 |
| **TRANSISTOR** | |
| Q401 | E-2 |
| Q402 | F-2 |
| Q404 | B-1 |
| Q407 | A-2 |
| Q408 | C-2 |
| Q409 | B-2 |
| Q410 | A-2 |
| Q411 | B-2 |

## CT-143
### -(B)SIDE-
1-652-358-11




## IR-16
### -(B)SIDE-
1-652-355-11



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

BI-79

CN101 14P

| | |
|---|---|
| +9V | 1 |
| CCD OUT | 2 |
| +9V | 3 |
| GND | 4 |
| V1 | 5 |
| +24V | 6 |
| VSUB | 7 |
| PG | 8 |
| V2 | 9 |
| H1 | 10 |
| V3 | 11 |
| H2 | 12 |
| V4 | 13 |
| GND | 14 |

HN1

CN202 14P

| | |
|---|---|
| 1 | +9V |
| 2 | CCD OUT |
| 3 | +9V |
| 4 | GND |
| 5 | V1 |
| 6 | +24V |
| 7 | VSUB |
| 8 | PG |
| 9 | V2 |
| 10 | H1 |
| 11 | V3 |
| 12 | H2 |
| 13 | V4 |
| 14 | GND |

JW101

DPR-53

CN201 6P

| | |
|---|---|
| CS OUT | 1 |
| A/D IN | 2 |
| VSUB | 3 |
| GND | 4 |
| PG | 5 |
| IRIS OUT | 6 |

CN203 24P

| | |
|---|---|
| 1 | HD |
| 2 | VD |
| 3 | VR |
| 4 | INT/LL |
| 5 | EXT |
| 6 | EXT VCO |
| 7 | GND |
| 8 | CLP4 |
| 9 | TD |
| 10 | XSG2 |
| 11 | XSUB OUT |
| 12 | XSUB IN |
| 13 | SHD2 |
| 14 | ED0 |
| 15 | ED1 |
| 16 | ED2 |
| 17 | +24V |
| 18 | GND |
| 19 | PG CONT |
| 20 | VSUB CONT |
| 21 | AGC CONT |
| 22 | IRIS GC |
| 23 | REF A/D |
| 24 | IRIS OUT |

CN204 18P

| | |
|---|---|
| 1 | GND |
| 2 | SCK |
| 3 | SI |
| 4 | SO |
| 5 | XCS_CORE |
| 6 | XCORE_RST |
| 7 | CS_OPD |
| 8 | OPD_RST |
| 9 | DAY REF |
| 10 | DAC REF |
| 11 | C_OUT |
| 12 | BC REF |
| 13 | +5V |
| 14 | +5V |
| 15 | GND |
| 16 | +9V |
| 17 | Y_OUT |
| 18 | +9V |

CN801 24P

| | |
|---|---|
| 1 | HD |
| 2 | VD |
| 3 | VR |
| 4 | INT/LL |
| 5 | EXT |
| 6 | EXT VCO |
| 7 | GND |
| 8 | CLP4 |
| 9 | TD |
| 10 | XSG2 |
| 11 | XSUB OUT |
| 12 | XSUB IN |
| 13 | SHD2 |
| 14 | ED0 |
| 15 | ED1 |
| 16 | ED2 |
| 17 | +24V |
| 18 | GND |
| 19 | PG CONT |
| 20 | VSUB CONT |
| 21 | AGC CONT |
| 22 | IRIS GC |
| 23 | A/D REF |
| 24 | IRIS OUT |

CN803 18P

| | |
|---|---|
| 1 | GND |
| 2 | SCK |
| 3 | SI |
| 4 | SO |
| 5 | XCS_CORE |
| 6 | XCORE_RST |
| 7 | CS_OPD |
| 8 | OPD_RST |
| 9 | DAY REF |
| 10 | DAC REF |
| 11 | C_OUT |
| 12 | BC REF |
| 13 | +5V |
| 14 | +5V |
| 15 | GND |
| 16 | +9V |
| 17 | Y_OUT |
| 18 | +9V |

PSW-26

P401

DC-DC CONVERTER UNIT

+24V +9V+5V GND CTL PW

L401 22uH L402 22uH L403 2.2uH

C415 33 6.3V

C416 4.7 20V

C417 4.7 35V

CN802 28P CN402 28P

| | | | |
|---|---|---|---|
| EXT_VS | 1 | 1 | EXT VS |
| GND | 2 | 2 | GND |
| INT/LL | 3 | 3 | INT/LL |
| V PULSE | 4 | 4 | V PULSE |
| SHIFT (+) | 5 | 5 | SHIFT (+) |
| SHIFT (-) | 6 | 6 | SHIFT (-) |
| CIRIS_ON/OFF | 7 | 7 | CIRIS ON/OFF |
| SHT1 | 8 | 8 | SHT1 |
| SHT2 | 9 | 9 | SHT2 |
| SHT4 | 10 | 10 | SHT4 |
| AGC_ON/OFF | 11 | 11 | AGC ON/OFF |
| ATW/AWB | 12 | 12 | ATB/AWB |
| AWB_LOCK | 13 | 13 | AWB LOCK |
| +5V | 14 | 14 | +5V |
| +5V | 15 | 15 | +5V |
| +24V | 16 | 16 | +24V |
| GND | 17 | 17 | GND |
| GND | 18 | 18 | GND |
| SHIFTER | 19 | 19 | SHIFTER |
| +9V | 20 | 20 | +9V |
| +9V | 21 | 21 | +9V |
| MONITOR OUT | 22 | 22 | MONITOR OUT |
| VIDEO OUT | 23 | 23 | VIDEO OUT |
| AI_DC | 24 | 24 | AI-DC |
| CONT- | 25 | 25 | CONT- |
| CONT+ | 26 | 26 | CONT+ |
| DRV+ | 27 | 27 | DRV+ |
| VS | 28 | 28 | VS |

A1 A2 A3 A4 A5 A6

R404 33a

R401 33a R402 33a R403 33a R405 33a

Q401 2SA1586YG-TE85L Q402 2SC4116YG-TE

AGC SW402 CCD IRIS SW403 SHUTTER SPEED

R406 10k R407 1k R408 56k

C401 330 35V C402 10 35V C403 330 6.3V C404 0.01 C405 330 6.3V

D401 1SE0510

VS IN MONITOR

B A

VIDEO OUT DC IN. VS VIDEO

DC1

FC-64

CN804 4P

| | |
|---|---|
| 1 | LAN DC |
| 2 | LAN SIG |
| 3 | LAN ON/OFF |
| 4 | GND |

For Adjustment

IR-16

LENS

CN752 4P

| | |
|---|---|
| 1 | DC/CONT- |
| 2 | NC/CONT+ |
| 3 | VS/DRV+ |
| 4 | GND |

Q751 2SD669A-C

L751 2.2uH

JW751

CN751 10P CN401 10P

| | | | |
|---|---|---|---|
| DC/CONT- | 1 | 1 | DC/CONT- |
| NC/CONT+ | 2 | 2 | NC/CONT+ |
| VS/DRV+ | 3 | 3 | VS/DRV+ |
| GND | 4 | 4 | GND |
| GND | 5 | 5 | GND |
| D/D IN | 6 | 6 | D/D IN |
| D/D IN | 7 | 7 | D/D IN |
| SW CONT | 8 | 8 | SW CONT |
| POWER IN | 9 | 9 | POWER IN |
| POWER IN | 10 | 10 | POWER IN |

SW401 AUTO IRIS

DC VIDEO

SSC-DC30/DC30P/DC34

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

A B C D E F G H I J

## OPR-53

CN201 6P

| | |
|---|---|
| CS OUT | 1 |
| A/D IN | 2 |
| VSUB | 3 |
| GND | 4 |
| PG | 5 |
| IRIS OUT | 6 |

CN204 18P / CN803 18P

| | | | |
|---|---|---|---|
| A/D REF | 23 | 23 | A/D REF |
| IRIS OUT | 24 | 24 | IRIS OUT |
| GND | 1 | 1 | GND |
| SCK | 2 | 2 | SCK |
| SI | 3 | 3 | SI |
| SO | 4 | 4 | SO |
| XCS_CORE | 5 | 5 | XCS_CORE |
| XCORE_RST | 6 | 6 | XCORE_RST |
| CS_OPB | 7 | 7 | CS_OPB |
| OPB_RST | 8 | 8 | OPB_RST |
| DAY REF | 9 | 9 | DAY REF |
| DAC REF | 10 | 10 | DAC REF |
| C_OUT | 11 | 11 | C_OUT |
| BC REF | 12 | 12 | BC REF |
| +5V | 13 | 13 | +5V |
| +5V | 14 | 14 | +5V |
| GND | 15 | 15 | GND |
| +9V | 16 | 16 | +9V |
| Y_OUT | 17 | 17 | Y_OUT |
| +9V | 18 | 18 | +9V |

## CT-143

CN502 2P

| | | |
|---|---|---|
| ØC12V | 1 | ØC 12V |
| | 2 | GNØ |

CN501 16P

| | |
|---|---|
| +12V | 1 |
| +12V | 2 |
| +5V | 3 |
| SHIFT (+) | 4 |
| SHIFT (-) | 5 |
| SHIFTER | 6 |
| NC | 7 |
| AWB-M | 8 |
| AWB-L | 9 |
| INT/OVL | 10 |
| PW CONT | 11 |
| GENLOCK | 12 |
| MONITOR OUT | 13 |
| GNØ | 14 |
| VIØEO/ØC IN | 15 |
| GNØ | 16 |

VS IN — B — VIØEO OUT

MONITOR OUT CN503 — A — ØCIN.VS IN VIØEO OUT CN504

SW505 ØC12V SW504 WHT BAL FL501 F501 D501 SLR-34MG3F SW506 MODE SW501 + SW502 - SW503 LOCK

HN2

## PSW-26

P401 ØC-ØC CONVERTER UNIT

CN802 28P / CN402 28P

| | | | |
|---|---|---|---|
| EXT_VS | 1 | 1 | EXT VS |
| GNØ | 2 | 2 | GNØ |
| INT/LL | 3 | 3 | INT/LL |
| V PULSE | 4 | 4 | V PULSE |
| SHIFT (+) | 5 | 5 | SHIFT (+) |
| SHIFT (-) | 6 | 6 | SHIFT (-) |
| CIRIS_ON/OFF | 7 | 7 | CIRIS ON/OFF |
| SHT1 | 8 | 8 | SHT1 |
| SHT2 | 9 | 9 | SHT2 |
| SHT4 | 10 | 10 | SHT4 |
| AGC_ON/OFF | 11 | 11 | AGC ON/OFF |
| ATW/AWB | 12 | 12 | ATB/AWB |
| AWB_LOCK | 13 | 13 | AWB LOCK |
| +5V | 14 | 14 | +5V |
| +5V | 15 | 15 | +5V |
| +24V | 16 | 16 | +24V |
| GNØ | 17 | 17 | GNØ |
| GNØ | 18 | 18 | GNØ |
| SHIFTER | 19 | 19 | SHIFTER |
| +9V | 20 | 20 | +9V |
| +9V | 21 | 21 | +9V |
| MONITOR OUT | 22 | 22 | MONITOR OUT |
| VIØEO OUT | 23 | 23 | VIØEO OUT |
| AI_ØC | 24 | 24 | AI-ØC |
| CONT- | 25 | 25 | CONT- |
| CONT+ | 26 | 26 | CONT+ |
| ØRV+ | 27 | 27 | ØRV+ |
| VS | 28 | 28 | VS |

CN403 16P

| | |
|---|---|
| +12V | 1 |
| +12V | 2 |
| +5V | 3 |
| SHIFT (+) | 4 |
| SHIFT (-) | 5 |
| SHIFTER | 6 |
| GNØ | 7 |
| AWB-M | 8 |
| AWB-L | 9 |
| INT/OVL | 10 |
| PW CONT | 11 |
| GENLOCK | 12 |
| MONITOR OUT | 13 |
| GNØ | 14 |
| VIØEO OUT | 15 |
| GNØ | 16 |

CN751 10P / CN401 10P

| | | | |
|---|---|---|---|
| ØC/CONT- | 1 | 1 | ØC/CONT- |
| NC/CONT+ | 2 | 2 | NC/CONT+ |
| VS/ØRV+ | 3 | 3 | VS/ØRV+ |
| GNØ | 4 | 4 | GNØ |
| GNØ | 5 | 5 | GNØ |
| Ø/Ø IN | 6 | 6 | Ø/Ø IN |
| Ø/Ø IN | 7 | 7 | Ø/Ø IN |
| SW CONT | 8 | 8 | SW CONT |
| POWER IN | 9 | 9 | POWER IN |
| POWER IN | 10 | 10 | POWER IN |

SW402 AGC CCD IRIS SW403 SHUTTER SPEED

SW401 AUTO IRIS ØC ⟷ VIØEO

Q751 2SD669A-C J751

Q401 2SA1586YG-TE85L Q402 2SC4116YG-TE85L Q403 TC7S02F-TE85L IC402 TC7S04F-TE85L Q404 XN1501-TX Q407 2SC4116YG-TE85L Q410 DTA114EUT106 Q411 2SC4116YG-TE85L IC401 TC4W53F-TE12L



5 - 7

For SSC-DC34

SSC-DC30/DC30P/DC34



## BI-79

| CN101 14P | | HN1 | CN202 14P | |
|---|---|---|---|---|
| +9V | 1 | | 1 | +9V |
| CCD OUT | 2 | | 2 | CCD OUT |
| +9V | 3 | | 3 | +9V |
| GND | 4 | | 4 | GND |
| V1 | 5 | | 5 | V1 |
| +24V | 6 | | 6 | +24V |
| VSUB | 7 | | 7 | VSUB |
| PG | 8 | | 8 | PG |
| V2 | 9 | | 9 | V2 |
| H1 | 10 | | 10 | H1 |
| V3 | 11 | | 11 | V3 |
| H2 | 12 | | 12 | H2 |
| V4 | 13 | | 13 | V4 |
| GND | 14 | | 14 | GND |

JW101

## DPR-53

CN201 6P

| | |
|---|---|
| CS OUT | 1 |
| A/D IN | 2 |
| VSUB | 3 |
| GND | 4 |
| PG | 5 |
| IRIS OUT | 6 |

| CN801 24P | | CN203 24P | |
|---|---|---|---|
| HD | 1 | 1 | HD |
| VD | 2 | 2 | VD |
| VR | 3 | 3 | VR |
| INT/LL | 4 | 4 | INT/LL |
| EXT | 5 | 5 | EXT |
| EXT VCO | 6 | 6 | EXT VCO |
| GND | 7 | 7 | GND |
| CLP4 | 8 | 8 | CLP4 |
| ID | 9 | 9 | ID |
| XSG2 | 10 | 10 | XSG2 |
| XSUB OUT | 11 | 11 | XSUB OUT |
| XSUB IN | 12 | 12 | XSUB IN |
| SHD2 | 13 | 13 | SHD2 |
| EDO | 14 | 14 | EDO |
| ED1 | 15 | 15 | ED1 |
| ED2 | 16 | 16 | ED2 |
| +24V | 17 | 17 | +24V |
| GND | 18 | 18 | GND |
| PG CONT | 19 | 19 | PG CONT |
| VSUB CONT | 20 | 20 | VSUB CONT |
| AGC CONT | 21 | 21 | AGC CONT |
| IRIS GC | 22 | 22 | IRIS GC |
| A/D REF | 23 | 23 | REF A/D |
| IRIS OUT | 24 | 24 | IRIS OUT |

| CN803 18P | | CN204 18P | |
|---|---|---|---|
| GND | 1 | 1 | GND |
| SCK | 2 | 2 | SCK |
| SI | 3 | 3 | SI |
| SO | 4 | 4 | SO |
| XCS_CORE | 5 | 5 | XCS_CORE |
| XCORE_RST | 6 | 6 | XCORE_RST |
| CS_OPD | 7 | 7 | CS_OPD |
| OPD_RST | 8 | 8 | OPD_RST |
| DAY REF | 9 | 9 | DAY REF |
| DAC REF | 10 | 10 | DAC REF |
| C_OUT | 11 | 11 | C_OUT |
| BC REF | 12 | 12 | BC REF |
| +5V | 13 | 13 | +5V |
| +5V | 14 | 14 | +5V |
| GND | 15 | 15 | GND |
| +9V | 16 | 16 | +9V |
| Y_OUT | 17 | 17 | Y_OUT |
| +9V | 18 | 18 | +9V |

## FC-64

| CN802 28P | | CN402 28P | | |
|---|---|---|---|---|
| EXT VS | 1 | 1 | EXT VS | A1 |
| GND | 2 | 2 | GND | A2 |
| INT/LL | 3 | 3 | INT/LL | A3 |
| V PULSE | 4 | 4 | V PULSE | |
| SHIFT (+) | 5 | 5 | SHIFT (+) | |
| SHIFT (-) | 6 | 6 | SHIFT (-) | |
| CIRIS ON/OFF | 7 | 7 | CIRIS ON/OFF | |
| SHT1 | 8 | 8 | SHT1 | |
| SHT2 | 9 | 9 | SHT2 | |
| SHT4 | 10 | 10 | SHT4 | |
| AGC ON/OFF | 11 | 11 | AGC ON/OFF | A4 |
| ATW/AWB | 12 | 12 | ATW/AWB | A5 |
| AWB LOCK | 13 | 13 | AWB LOCK | |
| +5V | 14 | 14 | +5V | |
| +5V | 15 | 15 | +5V | |
| +24V | 16 | 16 | +24V | |
| GND | 17 | 17 | GND | |
| GND | 18 | 18 | GND | A6 |
| SHIFTER | 19 | 19 | SHIFTER | |
| +9V | 20 | 20 | +9V | |
| +9V | 21 | 21 | +9V | |
| MONITOR OUT | 22 | 22 | MONITOR OUT | |
| VIDEO OUT | 23 | 23 | VIDEO OUT | |
| AI-DC | 24 | 24 | AI-DC | |
| CONT- | 25 | 25 | CONT- | |
| CONT+ | 26 | 26 | CONT+ | |
| DRV+ | 27 | 27 | DRV+ | |
| VS | 28 | 28 | VS | |

CN804 4P

| | |
|---|---|
| LAN DC | 1 |
| LAN SIG | 2 |
| LAN ON/OFF | 3 |
| GND | 4 |

For Adjustment

LENS

## IR-16

| CN752 4P | |
|---|---|
| DC/CONT- | 1 |
| NC/CONT+ | 2 |
| VS/DRV+ | 3 |
| GND | 4 |

L751 2.2mH

JW751

| CN751 10P | | CN401 10P | |
|---|---|---|---|
| DC/CONT- | 1 | 1 | DC/CONT- |
| NC/CONT+ | 2 | 2 | DC/CONT+ |
| VS/DRV+ | 3 | 3 | VS/DRV+ |
| GND | 4 | 4 | GND |
| GND | 5 | 5 | GND |
| D/D IN | 6 | 6 | |
| D/D IN | 7 | 7 | |
| SW CONT | 8 | 8 | |
| POWER IN | 9 | 9 | |
| POWER IN | 10 | 10 | |

## PSW-27

P401

AC-DC CONVERTER UNIT

+24 +9V +5V GND GND AC-IN

L401 22mH L402 22mH L403 2.2mH

C403 33 6.3V
C404 4.7 20V
C405 4.7 35V
C401 0.0022 500V

R401 33k R402 33k R403 33k R404 33k R405 33k

SW402 AGC CCD IRIS

SW403 SHUTTER SPEED 1/100 1/250 1/500 1/1000 1/2000 1/4000 1/10000

(C401 TLP121) 401 C402 0.1 R405 MAT4YWA-TX R406 4.7k R407 4.7k

SW401 AUTO IRIS DC → VIDEO

## CN602 2P

AC24V

| | |
|---|---|
| 1 | AC 24V |
| 2 | AC 24V |

C601 0.0022 500V
C602 0.0022 500V
F601
R605 33k 1/4W
R401 SLR-34MD3F
R404 2.2k 1/9

V PHASE SW601 SW602

AWB SW604 ATW

WHT BAL

LOCK SW603

LL INT SW605 SYNC

R602 RDS.6ES-T1B2
R603 RDS.6ES-T1B2

CN603 VIDEO OUT



5 - 8

8 9 10 12 13 14 15 16 17 18 19 20 21 22

## DPR-53

CN201 6P

| | |
|---|---|
| CS OUT | 1 |
| A/D IN | 2 |
| VSUB | 3 |
| GND | 4 |
| PG | 5 |
| IRIS OUT | 6 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ED2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | | | | | | | | |
| +24V | GND | PG CONT | VSUB CONT | AGC CONT | IRIS GC | A/D REF | IRIS OUT | | | | | | | | | | | | | | | | | |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | CN204 18P | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | | | | | | | | | | GND | SCK | SI | SO | XCS_CORE | XCORE_RST | CS_OPD | OPD_RST | DAY REF | DAC REF | C_OUT | BC REF | +5V | +5V | GND | +9V | Y_OUT | +9V |
| | | | | | | | | | CN803 18P | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| LD2 | | | | | | | | | | GND | SCK | SI | SO | XCS_CORE | XCORE_RST | CS_OPD | OPD_RST | DAY REF | DAC REF | C_OUT | BC REF | +5V | +5V | GND | +9V | Y_OUT | +9V |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | | | | | | | | | |
| +24V | GND | PG CONT | VSUB CONT | AGC CONT | IRIS GC | A/D REF | IRIS OUT | | | | | | | | | | | | | | | | | |

## CT-144

CN602 2P

| | | |
|---|---|---|
| AC24V | 1 | AC 24V |
| | 2 | AC 24V |

CN601 16P

| | | |
|---|---|---|
| AC | 1 | 2 |
| AC | 2 | 3 |
| +5V | 3 | 4 |
| SHIFT (+) | 4 | 5 |
| SHIFT (-) | 5 | 6 |
| SHIFTER | 6 | 7 |
| INT/LL | 7 | 8 |
| AWB-M | 8 | 9 |
| AWB-L | 9 | 10 |
| NC | 10 | 11 |
| NC | 11 | 12 |
| NC | 12 | 13 |
| VIDEO OUT | 13 | 14 |
| GND | 14 | 15 |
| NC | 15 | 16 |
| GND | 16 | |

C601 0.0022 500V
C602 0.0022 500V
F601
R605 33k 1/4W
R601 33k 1/4W
R602 33k 1/4W
R604 2.2k 1/4W
1:9
D601 SLR-34MG3F
V PHASE
SW601
SW602
AWB
ATW
SW604
WHT BAL
LOCK SW603
LL
INT
SW605
SYNC
D602 RBS.6ES-T1B2
D603 RBS.6ES-T1B2
CN603
VIDEO OUT

HN2

## PSW-27

P401
AC-DC CONVERTER UNIT
+24 +9V +5V GND GND AC-IN

L401 22uH
L402 22uH
L403 2.2mH
C403 33 6.3V
C404 4.7 20V
C405 4.7 35V
C401 0.0022 500V

CN802 28P CN402 28P

| | | | |
|---|---|---|---|
| EXT VS | 1 | 1 | EXT VS |
| GND | 2 | 2 | GND |
| INT/LL | 3 | 3 | INT/LL |
| V PULSE | 4 | 4 | V PULSE |
| SHIFT (+) | 5 | 5 | SHIFT (+) |
| SHIFT (-) | 6 | 6 | SHIFT (-) |
| CIRIS ON/OFF | 7 | 7 | CIRIS ON/OFF |
| SHT1 | 8 | 8 | SHT1 |
| SHT2 | 9 | 9 | SHT2 |
| SHT4 | 10 | 10 | SHT4 |
| AGC ON/OFF | 11 | 11 | AGC ON/OFF |
| ATW/AWB | 12 | 12 | ATW/AWB |
| AWB LOCK | 13 | 13 | AWB LOCK |
| +5V | 14 | 14 | +5V |
| +5V | 15 | 15 | +5V |
| +24V | 16 | 16 | +24V |
| GND | 17 | 17 | GND |
| GND | 18 | 18 | GND |
| SHIFTER | 19 | 19 | SHIFTER |
| +9V | 20 | 20 | +9V |
| +9V | 21 | 21 | +9V |
| MONITOR OUT | 22 | 22 | MONITOR OUT |
| VIDEO OUT | 23 | 23 | VIDEO OUT |
| AI-DC | 24 | 24 | AI-DC |
| CONT- | 25 | 25 | CONT- |
| CONT+ | 26 | 26 | CONT+ |
| DRV+ | 27 | 27 | DRV+ |
| VS | 28 | 28 | VS |

A1 A2 A3 A4 A5 A6

R401 33k
R402 33k
R403 33k
R404 33k
R405 33k
AGC
CCD IRIS
SW402
SW403 SHUTTER SPEED

[C401] TLP121
401
R406 4.7k
R407 4.7k
C402 0.1
D403 MA141WA-TX

CN403 16P

| | | |
|---|---|---|
| AC | 1 | 2 |
| AC | 2 | 3 |
| +5V | 3 | 4 |
| SHIFT (+) | 4 | 5 |
| SHIFT (-) | 5 | 6 |
| SHIFTER | 6 | 7 |
| INT/LL | 7 | 8 |
| AWB-M | 8 | 9 |
| AWB-L | 9 | 10 |
| NC | 10 | 11 |
| NC | 11 | 12 |
| NC | 12 | 13 |
| VIDEO OUT | 13 | 14 |
| GND | 14 | 15 |
| NC | 15 | 16 |
| GND | 16 | |

A2 A3 A6 A1 A4 A5

CN751 10P CN401 10P

| | | | |
|---|---|---|---|
| DC/CONT- | 1 | 1 | DC/CONT- |
| NC/CONT+ | 2 | 2 | DC/CONT+ |
| VS/DRV+ | 3 | 3 | VS/DRV+ |
| GND | 4 | 4 | GND |
| GND | 5 | 5 | GND |
| D/D IN | 6 | 6 | |
| D/D IN | 7 | 7 | |
| SW CONT | 8 | 8 | |
| POWER IN | 9 | 9 | |
| POWER IN | 10 | 10 | |

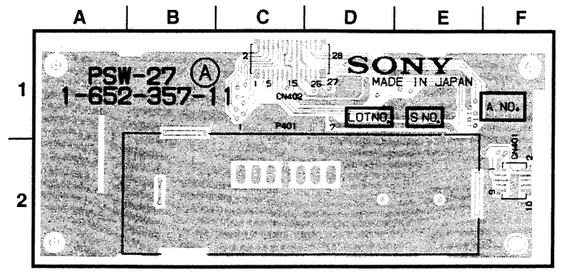
DC/CONT-
NC/CONT+
VS/DRV+
GND
8.9
0
1.2
L751 2.2mH
J751
SW401 AUTO IRIS
DC ——VIDEO

## IR-16

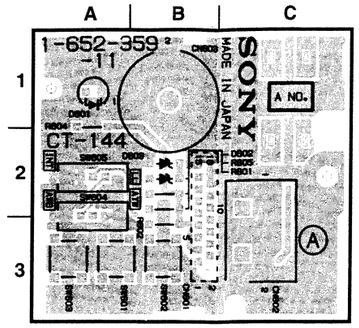


5 - 8

## PSW-27
### -(A)SIDE-
1-652-357-11

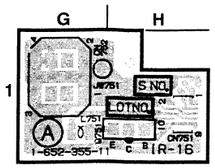



## CT-144
### -(A)SIDE-
1-652-359-11

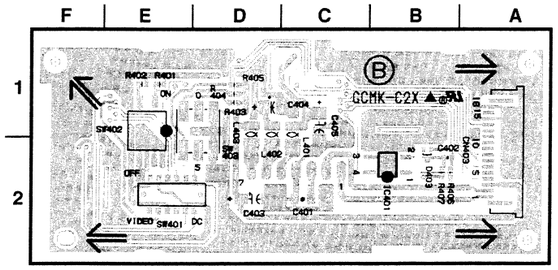



| DIODE | |
|---|---|
| D601 | A-1 |
| D602 | C-2 |
| D603 | B-2 |

## IR-16
### -(A)SIDE-
1-652-355-11

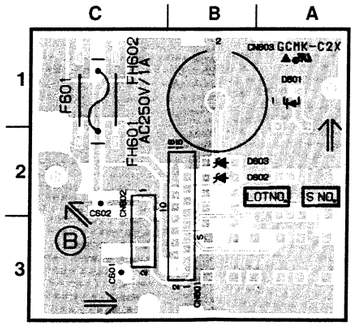



## PSW-27
### -(B)SIDE-
1-652-357-11

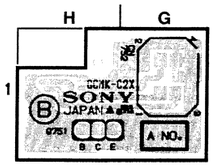



| DIODE | |
|---|---|
| D403 | B-2 |

## CT-144
### -(B)SIDE-
1-652-359-11




## IR-16
### -(B)SIDE-
1-652-355-11

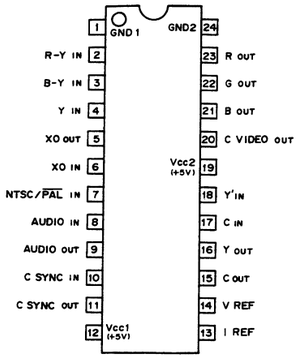


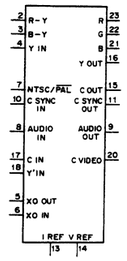
## 5-3. SEMICONDUCTOR PIN ASSIGNMENTS

The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

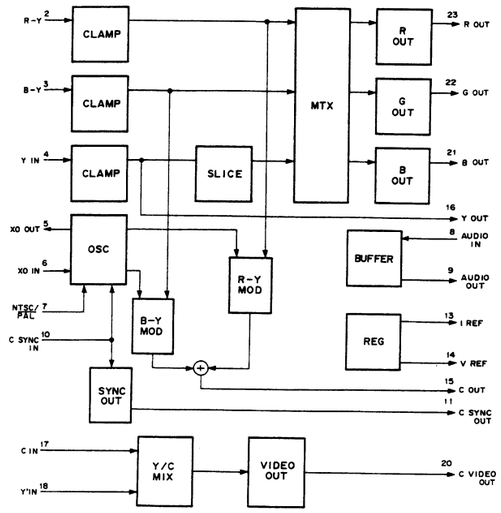

| TYPE | PAGE |
|---|---|
| **IC** | |
| CXA1229M | 5-10 |
| CXA1390AR | 5-10 |
| CXA1399Q | 5-12 |
| CXA1577R | 5-11 |
| CXD1177Q | 5-13 |
| CXD2130R | 5-14 |
| CXD2133BR | 5-15 |
| CXD8340R | 5-17 |
| CXD8835M | 5-13 |
| CXK1024M | 5-13 |
| CXP80624 | 5-18 |
| HD14053BFP | 5-19 |
| ICX038BNA | 5-20 |
| ICX039BNA | 5-20 |
| M62352GP | 5-20 |
| MC14053BF | 5-19 |
| MC14577CF | 5-20 |
| NJM2230M | 5-21 |
| NJM3414M | 5-21 |
| NJM4558M | 5-21 |
| S-8054ALB-LM-S | 5-21 |
| SC7S00F | 5-21 |
| SC7S02F | 5-21 |
| SC7S04F | 5-21 |
| SC7S32F | 5-21 |
| SN74HC51NS | 5-22 |
| SN74HC74ANS | 5-22 |
| TC4S584F | 5-22 |
| TC4W53F | 5-22 |
| TC5081AP | 5-22 |
| TC74HC123AF | 5-22 |
| TC74HC4538AF | 4-23 |
| TC74HC51AF | 5-22 |
| TC7S00F | 5-21 |
| TC7S02F | 5-21 |
| TC7S04F | 5-21 |
| TC7S14FU | 5-23 |
| TC7S32F | 5-21 |
| TC7SU04F | 5-21 |
| TC7W74FU | 5-23 |
| TL1596CPW | 5-23 |
| UPC324G2 | 5-23 |
| UPC358G2 | 5-23 |
| UPC393G2 | 5-23 |
| UPC4558G2 | 4-21 |
| **Tr, Di** | |
| 11EQS10 | 5-24 |
| 1SS181 | 5-24 |
| 1SS226 | 5-24 |
| 1T33C | 5-24 |
| 2SA1586 | 5-24 |
| 2SC3617 | 5-24 |
| 2SC4116 | 5-24 |
| 2SC4178 | 5-24 |
| 2SD669A | 5-24 |
| 2SK300 | 5-24 |
| DTA114EU | 5-24 |
| DTC114EU | 5-24 |
| MA110 | 5-24 |
| MA141WA | 5-24 |
| MA141WK | 5-24 |
| MA143 | 5-24 |
| RD ? ?ESB ? | 5-24 |
| RD ? ?M-B | 5-24 |
| RD ? ?M-B ? | 5-24 |
| SLR-34MG3F | 5-24 |
| TLP121 | 5-24 |
| XN1501 | 5-24 |


CXA1229M (SONY) FLAT PACKAGE
NTSC/PAL ENCODER
– TOP VIEW –

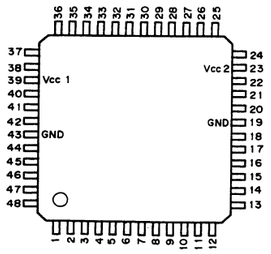



AUDIO ; AUDIO SIGNAL INPUT/OUTPUT
B ; ANALOG BLUE SIGNAL OUTPUT
B-Y ; B-Y SIGNAL INPUT
C ; CHROMA SIGNAL INPUT/OUTPUT
C SYNC ; COMPOSITE SYNC SIGNAL INPUT/OUTPUT
C VIDEO ; COMPOSITE VIDEO SIGNAL OUTPUT
G ; ANALOG GREEN SIGNAL OUTPUT
I REF ; REFERENCE CURRENT TERMINAL
NTSC/PAL ; NTSC/PAL SELECT INPUT
R ; ANALOG RED SIGNAL OUTPUT
R-Y ; R-Y SIGNAL INPUT
V REF ; REFERENCE VOLTAGE TERMINAL
XO ; CRYSTAL OSCILLATOR TERMINALS
Y ; Y SIGNAL INPUT/OUTPUT
Y' ; DEFERRED Y SIGNAL INPUT



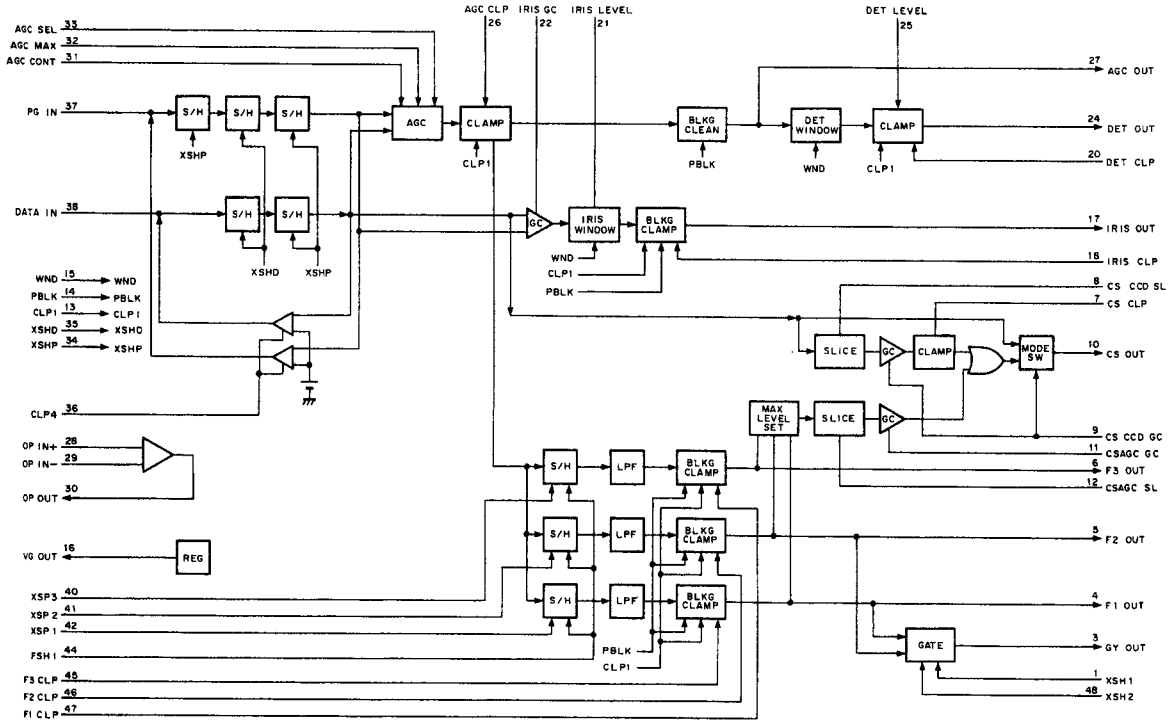

CXA1390AR (SONY)
C-MOS SAMPLE & HOLD AND AGC FOR CCD
– TOP VIEW –




| PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I | XSH1 | 13 | I | CLP 1 | 25 | I | DET LEVEL | 37 | I | PG IN |
| 2 | O | DC OUT | 14 | I | PBLK | 26 | I | AGC CLP | 38 | I | DATA IN |
| 3 | O | GY OUT | 15 | I | WND | 27 | O | AGC OUT | 39 | – | Vcc1 |
| 4 | O | F1 OUT | 16 | O | VG OUT | 28 | I | OP IN + | 40 | I | XSP3 |
| 5 | O | F2 OUT | 17 | O | IRIS OUT | 29 | I | OP IN – | 41 | I | XSP2 |
| 6 | O | F3 OUT | 18 | I | IRIS CLP | 30 | O | OP OUT | 42 | I | XSP1 |
| 7 | I | CS CLP | 19 | – | GND | 31 | I | AGC CONT | 43 | – | GND |
| 8 | I | CS CCD SL | 20 | I | DET CLP | 32 | I | AGC MAX | 44 | I | FSH1 |
| 9 | I | CS CCD GC | 21 | I | IRIS LEVEL | 33 | I | AGC SEL | 45 | I | F3 CLP |
| 10 | O | CS OUT | 22 | I | IRIS GC | 34 | I | XSHP | 46 | I | F2 CLP |
| 11 | I | CS AGC GC | 23 | – | Vcc2 | 35 | I | XSHD | 47 | I | F1 CLP |
| 12 | I | CS AGC SL | 24 | O | DET OUT | 36 | I | CLP4 | 48 | I | XSH2 |

**INPUT**
XSH1, XSH2 ; SAMPLE AND HOLD PULSE INPUTS FOR 1H DELAY LINE
XSHP, XSHD ; SAMPLE AND HOLD PULSE INPUTS FOR CCD IMAGER
XSP3, XSP2, XSP1 ; SAMPLE AND HOLD PULSE INPUTS FOR COLOR SEPARATION
CS CLP ; CLAMP INPUT FOR COLOR SEPARATION
IRIS CLP ; CLAMP INPUT FOR IRIS CONT
DET CLP ; CLAMP INPUT FOR SIGNAL DETECT
AGC CLP ; CLAMP INPUT FOR AGC
F3/F2/F1 CLP ; CLAMP INPUTS FOR F1, F2 AND F3
CS CCD SL ; HIGH LUMINANCE DET LEVEL ADJ FOR INPUT SIGNAL
CS CCD GC ; HIGH LUMINANCE GAIN ADJ FOR INPUT SIGNAL
CSAGC GC ; HIGH LUMINANCE DET LEVEL ADJ FOR AFTER AGC
CSAGC SL ; HIGH LUMINANCE DET LEVEL ADJ FOR INPUT SIGNAL
IRIS LEVEL ; WEIGHT ADJ INPUT FOR DET OUTPUT
IRIS GC ; GAIN CONT INPUT FOR IRIS OUT
DET LEVEL ; WEIGHT ADJ INPUT FOR DET OUTPUT
AGC CONT ; AGC AMPLIFIER GAIN CONT INPUT
AGC MAX ; AGC AMPLIFIER MAX GAIN CONT INPUT
CLP1 ; CLAMP PULSE 1 INPUT
PBLK ; PRE BLKG PULSE INPUT
WND ; WINDOW PULSE INPUT
CLP4 ; CLAMP PULSE 4 INPUT
OP IN + ; NON-INVERTING INPUT OF OPERATIONAL AMPLIFIER
OP IN – ; INVERTING INPUT OF OPERATIONAL AMPLIFIER
AGC SEL ; GAIN SELECT FOR AGC AMPLIFIER
PG IN ; CCD SIGNAL INPUT
DATA IN ; CCD SIGNAL INPUT
FSHI ; LOCK SPEED ADJ INPUT FOR COLOR SEPARATION S/H

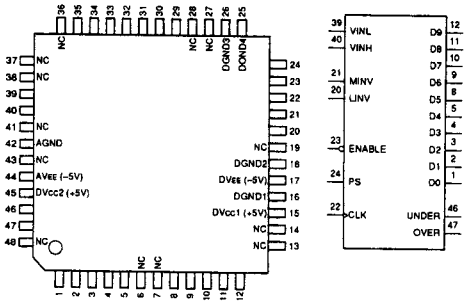
**OUTPUT**
GY OUT ; GY OUTPUT
F1, F2, F3 OUT ; F1, F2 AND F3 OUTPUTS
AGC OUT ; AGC OUTPUT
CS OUT ; COLOR SEPARATION OUTPUT
IRIS OUT ; IRIS OUTPUT
DET OUT ; DET OUTPUT
VG OUT ; REGULATED DC OUTPUT
OP OUT ; OPERATIONAL AMPLIFIER OUTPUT




CXA1577R (SONY)

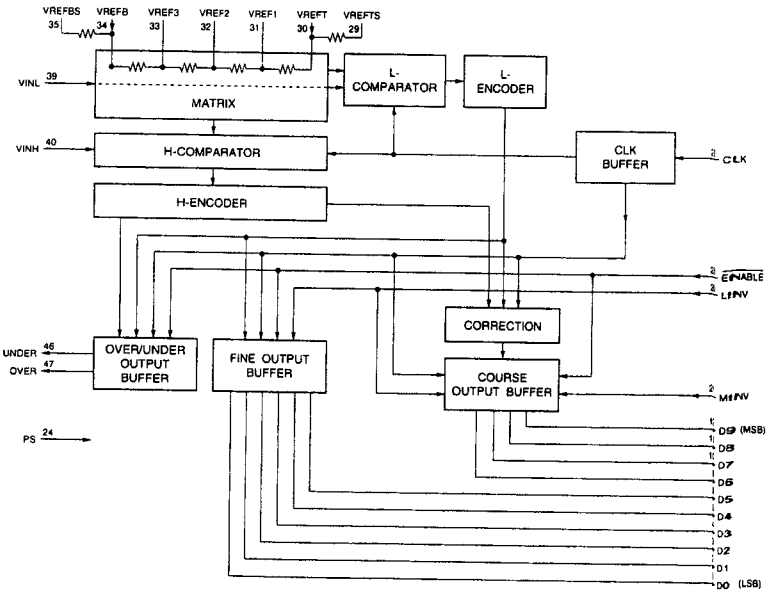
TTL 10-BIT 20MSPS A/D CONVERTER

– TOP VIEW –




( DVcc1,DVcc2 = +5V
AVEE1,DVEE = –5V )

| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | O | D0 (LSB) | 13 | — | NC | 25 | — | DGND4 | 37 | — | NC |
| 2 | O | D1 | 14 | — | NC | 26 | — | DGND3 | 38 | — | NC |
| 3 | O | D2 | 15 | — | DVcc1 | 27 | — | NC | 39 | I | VINL |
| 4 | O | D3 | 16 | — | DGND1 | 28 | — | NC | 40 | I | VINH |
| 5 | O | D4 | 17 | — | DVEE | 29 | — | VREFTS | 41 | — | NC |
| 6 | — | NC | 18 | — | DGND2 | 30 | I | VREFT | 42 | — | AGND |
| 7 | — | NC | 19 | — | NC | 31 | — | VREF1 | 43 | — | NC |
| 8 | O | D5 | 20 | I | LINV | 32 | — | VREF2 | 44 | — | AVEE |
| 9 | O | D6 | 21 | I | MINV | 33 | — | VREF3 | 45 | — | DVcc2 |
| 10 | O | D7 | 22 | I | CLK | 34 | I | VREFB | 46 | O | UNDER |
| 11 | O | D8 | 23 | I | ENABLE | 35 | — | VREFBS | 47 | O | OVER |
| 12 | O | D9 (MSB) | 24 | I | PS | 36 | — | NC | 48 | — | NC |




**INPUT**

CLK : SYSTEM CLOCK
ENABLE ; 3 STAGE CONTROL (L: ENABLE)
LINV ; D0 (LSB) - D8 INVERSE
MINV ; D9 (MSB) INVERSE
PS ; POWER SAVE (H: POWER SAVE MODE)
VINL, VINH; ANALOG

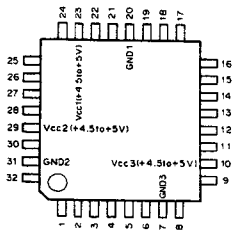
**OUTPUT**

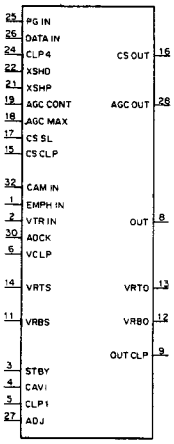
D0 (LSB) - D9 (MSB); DIGITAL
UNDER ; UNDER FLOW
OVER ; OVER FLOW

CXA1399Q (SONY) FLAT PACKAGE

HEAD AMPLIFIER FOR DIGITAL CCD CAMERA

– TOP VIEW –




(Vcc1 to 3 = +4.5 to +5V)

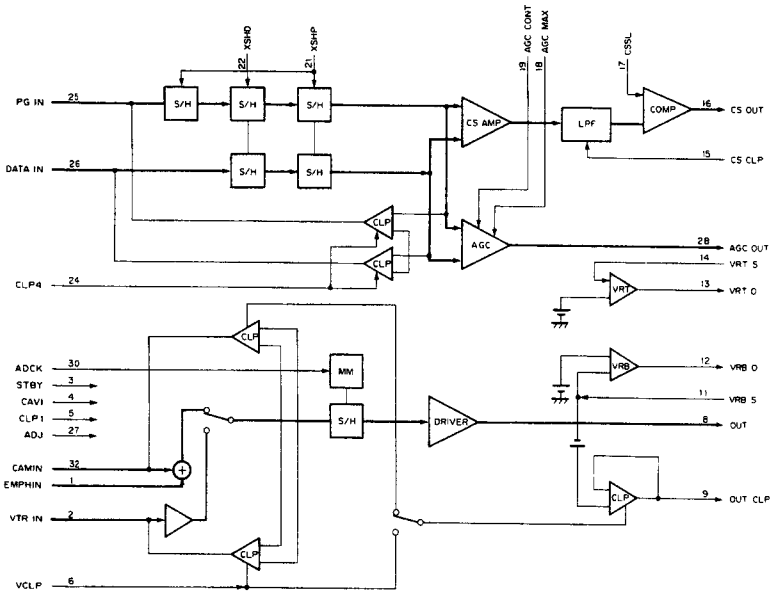
| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|
| 1 | I | EMPHIN | 17 | I | CSSL |
| 2 | I | VTRIN | 18 | I | AGCMAX |
| 3 | I | STBY | 19 | I | AGCCONT |
| 4 | I | CAVI | 20 | – | GND |
| 5 | I | CLP1 | 21 | I | XSHP |
| 6 | I | VCLP | 22 | I | XSHD |
| 7 | – | GND | 23 | – | Vcc |
| 8 | O | OUT | 24 | I | CLP4 |
| 9 | O | OUTCLP | 25 | I | PGIN |
| 10 | – | Vcc | 26 | I | DATAIN |
| 11 | I | VRBS | 27 | I | ADJ |
| 12 | O | VRBO | 28 | O | AGCOUT |
| 13 | O | VRTO | 29 | – | Vcc |
| 14 | I | VRTS | 30 | I | ADCK |
| 15 | I | CSCLP | 31 | – | GND |
| 16 | O | CSOUT | 32 | I | CAMIN |

**INPUT**

ADCK ; S/H TRIGGER PULSE INPUT FOR A/D.
ADJ ; INTERNAL S/H SAMPLING WIDTH ADJUSTMENT.
AGCCONT ; AGC AMPLIFIER GAIN ADJUSTMENT.
AGCMAX ; AGC AMPLIFIER MAX GAIN ADJUSTMENT.
CAMIN ; AGC OUT (PIN – 28) COUPLING DEPENDING ON CAPACITY.
CAVI ; CAMERA MODE (EMPHIN/CAMIN → OUT) AND VTR MODE (VTRIN → OUT) SWITCHING AT INPUT STAGE.
CLP1 ; CLAMP PULSE. CLP1 : CAMERA.
CLP4 ; CLAMP PULSE.
CSCLP ; CAPACITOR CONNECTION FOR CLAMPING.
CSSL ; THRESHOLD ADJUSTMENT FOR CHROMA SUPPRESSION.
DATAIN ; CCD SIGNAL INPUT.
EMPHIN ; HAS AGC OUT (PIN – 28) OUTPUT SIGNAL PASSED THROUGH EXTERNAL BAND PASS FILTER (CHROMA COMPONENT ONLY).
PGIN ; CCD SIGNAL INPUT.
STBY ; A1399 POWER SAVE MODE SWITCHING (NORMALLY GND).
VCLP ; CLAMP PULSE. VCLP : VIDEO.
VRBS ; INTERNAL OPERATION AMPLIFIER INVERTED INPUT IN 2V REGULATOR.
VRTS ; INTERNAL OPERATION AMPLIFIER INVERTED INPUT IN 4V REGULATOR.
VTRIN ; VIDEO PLAYBACK SIGNAL.
XSHD ; HIGH SPEED PULSE INPUT FOR S/H.
XSHP ; HIGH SPEED PULSE INPUT FOR S/H.

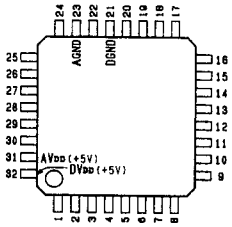
**OUTPUT**

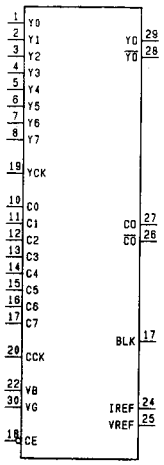
AGCOUT ; AGC OUTPUT
CSOUT ; FOR CHROMA SUPPRESSION AND FOR SELECTING S/H CIRCUIT OPERATION FOR A/D.
OUT ; DRIVER OUTPUT. STANDARD D RANGE : 2.2V.
OUTCLP ; CLAMPS BLACK LEVEL OF OUT (PIN – 8) OUTPUT SIGNAL AT 2.0V.
VRBO ; 2V REGULATOR.
VRTO ; 4V REGULATOR.



CXD1177Q (SONY)

C-MOS Y/C 2 CHANNEL D/A CONVERTER
– TOP VIEW –

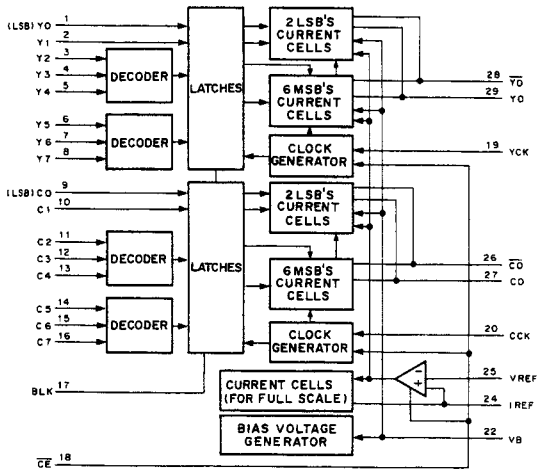



| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|
| 1 | I | Y0 | 17 | O | BLK |
| 2 | I | Y1 | 18 | I | $\overline{CE}$ |
| 3 | I | Y2 | 19 | I | YCK |
| 4 | I | Y3 | 20 | I | CCK |
| 5 | I | Y4 | 21 | – | DGND |
| 6 | I | Y5 | 22 | I | VB |
| 7 | I | Y6 | 23 | – | AGND |
| 8 | I | Y7 | 24 | O | IREF |
| 9 | I | C0 | 25 | O | VREF |
| 10 | I | C1 | 26 | O | $\overline{CO}$ |
| 11 | I | C2 | 27 | O | CO |
| 12 | I | C3 | 28 | O | $\overline{YO}$ |
| 13 | I | C4 | 29 | O | YO |
| 14 | I | C5 | 30 | I | VG |
| 15 | I | C6 | 31 | – | AVDD |
| 16 | I | C7 | 32 | – | DVDD |

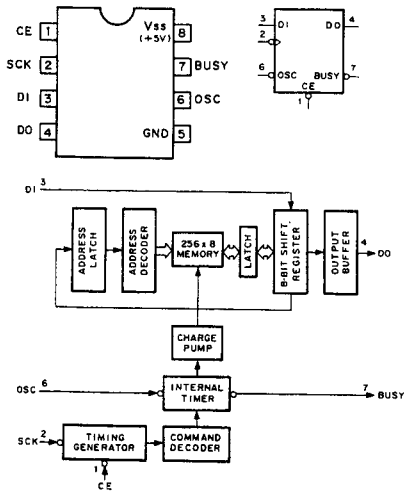
**INPUT**
C0 – C7 ; C DATA
CCK ; CHROMA CLOCK
$\overline{CE}$ ; CHIP ENABLE
VB ; BIAS VOLTAGE
VG ; GND VOLTAGE
Y0 – Y7 ; Y DATA
YCK ; LUMINANCE CLOCK

**OUTPUT**
BLK ; BLANKING PULSE
C0 – $\overline{CO}$ ; C DATA
IREF ; CURRENT REFERENCE
VREF ; VOLTAGE REFERENCE
Y0 – $\overline{YO}$ ; Y DATA



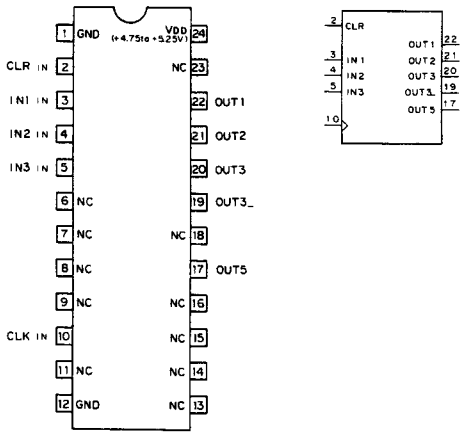

CXK1024M (SONY) FLAT PACKAGE

MNOS 2K (256x8)-BIT NON-VOLATILE MEMORY
– TOP VIEW –




CXD8835M (TOSHIBA) FLAT PACKAGE

C-MOS OBSERVATION CAMERA
– TOP VIEW –

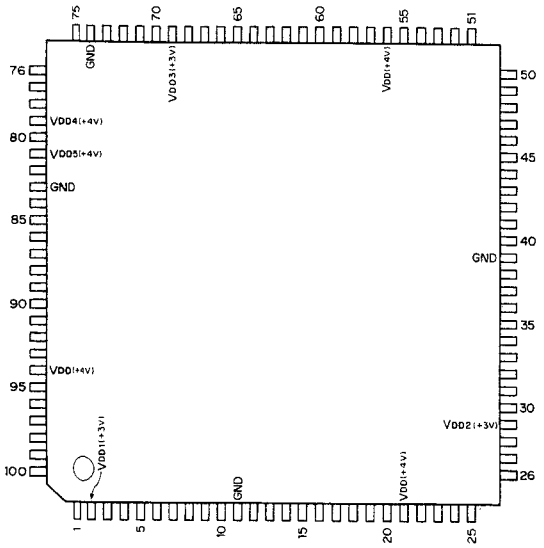



CLK; CLOCK IN
CLR; COUNTER CLEAR

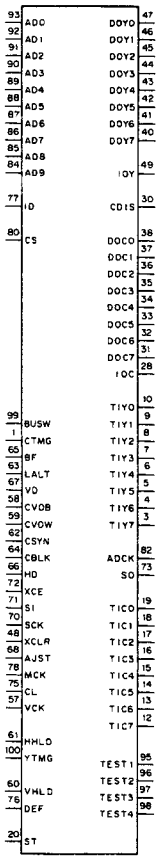
CXD2130R (SONY) FLAT PACKAGE

C-MOS DIGITAL SIGNAL PROCESSING LSI FOR CCD COLOR CAMERA

– TOP VIEW –




| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|
| 1 | I | CTMG | 51 | – | VGY |
| 2 | – | VDD1 (+3V) | 52 | – | VRFY |
| 3 | I/O | TIY7 | 53 | – | IRFY |
| 4 | I/O | TIY6 | 54 | – | AVssY |
| 5 | I/O | TIY5 | 55 | – | VBY |
| 6 | I/O | TIY4 | 56 | – | VDD (+4V) |
| 7 | I/O | TIY3 | 57 | I | VCK |
| 8 | I/O | TIY2 | 58 | I | CVOB |
| 9 | I/O | TIY1 | 59 | I | CVOW |
| 10 | I/O | TIY0 | 60 | I | VHLD |
| 11 | – | GND | 61 | I | HHLD |
| 12 | I/O | TIC7 | 62 | I | CSYN |
| 13 | I/O | TIC6 | 63 | I | LALT |
| 14 | I/O | TIC5 | 64 | I | CBLK |
| 15 | I/O | TIC4 | 65 | I | BF |
| 16 | I/O | TIC3 | 66 | I | HD |
| 17 | I/O | TIC2 | 67 | I | VD |
| 18 | I/O | TIC1 | 68 | I | AJST |
| 19 | I/O | TIC0 | 69 | – | VDD3 (+3V) |
| 20 | I/O | ST | 70 | I | SCK |
| 21 | – | VDD (+4V) | 71 | I | SI |
| 22 | – | VBC | 72 | I | XCE |
| 23 | – | AVssC | 73 | O | SO |
| 24 | – | IRFC | 74 | – | GND |
| 25 | – | VRFC | 75 | I | CL |
| 26 | – | VGC | 76 | I | DEF |
| 27 | – | AVDDC | 77 | I | ID |
| 28 | O | IOC | 78 | I | MCK |
| 29 | – | VDD2 (+3V) | 79 | – | VDD4 (+4V) |
| 30 | O | CDIS | 80 | I | CS |
| 31 | I/O | DOC7 | 81 | – | VDD5 (+4V) |
| 32 | I/O | DOC6 | 82 | O | ADCK |
| 33 | I/O | DOC5 | 83 | – | GND |
| 34 | I/O | DOC4 | 84 | I | AD9 |
| 35 | I/O | DOC3 | 85 | I | AD8 |
| 36 | I/O | DOC2 | 86 | I | AD7 |
| 37 | I/O | DOC1 | 87 | I | AD6 |
| 38 | I/O | DOC0 | 88 | I | AD5 |
| 39 | – | GND | 89 | I | AD4 |
| 40 | I/O | DOY7 | 90 | I | AD3 |
| 41 | I/O | DOY6 | 91 | I | AD2 |
| 42 | I/O | DOY5 | 92 | I | AD1 |
| 43 | I/O | DOY4 | 93 | I | AD0 |
| 44 | I/O | DOY3 | 94 | – | VDD (+4V) |
| 45 | I/O | DOY2 | 95 | O | TEST1 |
| 46 | I/O | DOY1 | 96 | O | TEST2 |
| 47 | I/O | DOY0 | 97 | O | TEST3 |
| 48 | I | XCLR | 98 | O | TEST4 |
| 49 | O | IOY | 99 | I | BUSW |
| 50 | – | AVDDY | 100 | I | YTMG |




**INPUT**

| | |
|---|---|
| AD0 – AD9 | : A/D CONVERTER DATA |
| AJST | : LACH PULSE (L : LATCH/H : NORMAL) |
| BF | : BURST FLAG |
| BUSW | : INPUT/OUTPUT CONTROL FOR TITLOR |
| CBLK | : COMPOSITE BLANK |
| CL | : CLOCK (NTSC : 910fH, PAL : 908fH) |
| CTMG | : TITLE DATA |
| CS | : CHROMA SUPPRESS |
| CSYN | : COMPOSITE SYNC |
| CVOB | : CONTROL FOR BLACK SAMPLING CHARACTER (H : BLACK/L : NORMAL COLOR) |
| CVOW | : CONTROL FOR WHITE SAMPLING CHARACTER (H : WHITE/L : NORMAL COLOR) |
| DEF | : SIGNAL CORRECTION TIMING (H : NORMAL) |
| HD | : HORIZONTAL DIRECTION SYNC SIGNAL |
| HHLD | : HORIZONTAL DIRECTION HOLD SIGNAL FOR MOSAIC |
| ID | : CCD LINE ID SIGNAL |
| LALT | : LINE ALTERNATE |
| MCK | : MAIN CLOCK |
| SCK | : CLOCK FOR SERIAL DATA |
| SI | : SERIAL DATA |
| VCK | : CHROMA SIGNAL PROCEESS 4fsc CLOCK |
| VD | : VERTICAL DIRECTION SYNC SIGNAL |
| VHLD | : VERTICAL DIRECTION HOLD SIGNAL FOR MOSAIC |
| XCE | : ENABLE SIGNAL |
| XCLR | : CLEAR (H : NORMAL) |
| YTMG | : TITLE DATA |

**OUTPUT**

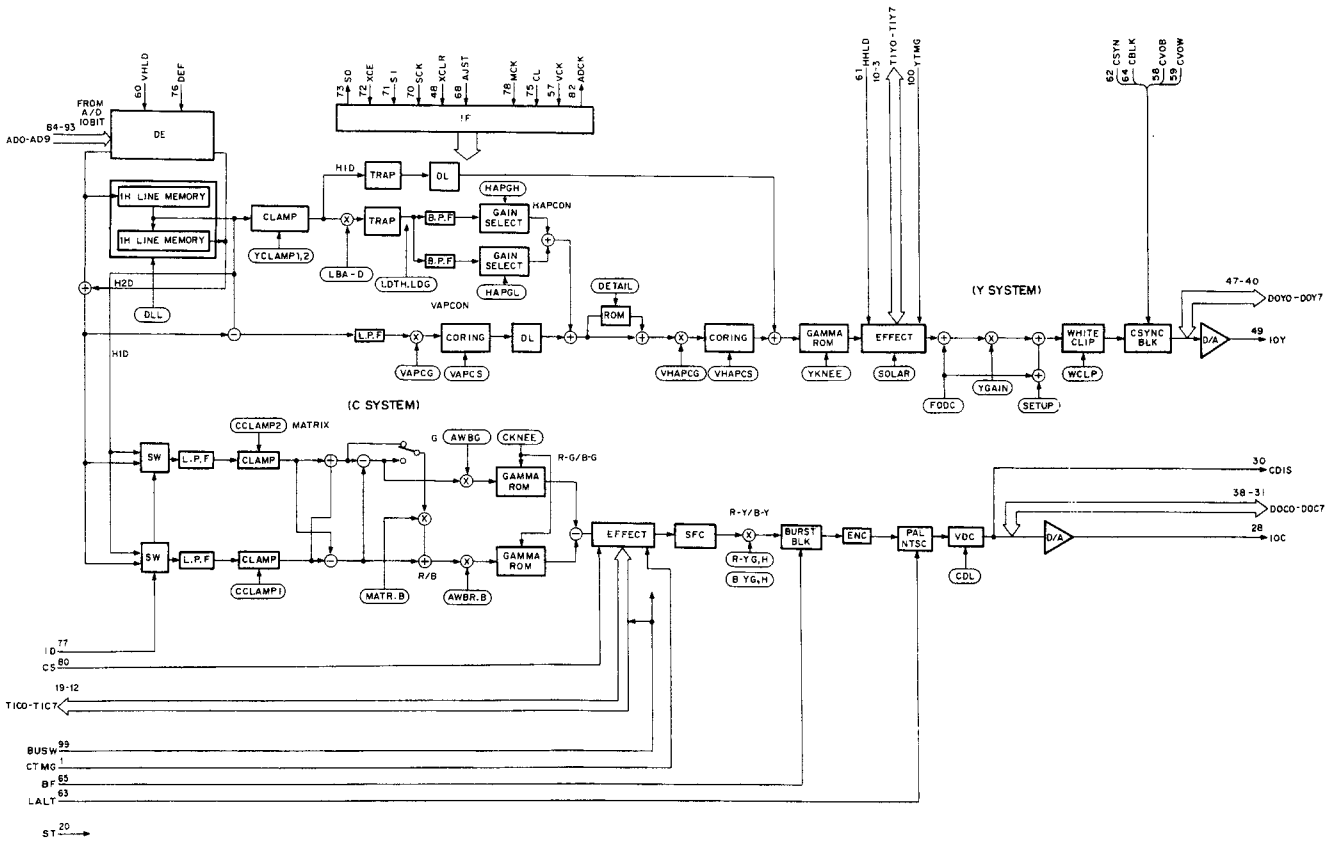
| | |
|---|---|
| ADCK | : CLOCK FOR A/D CONVERTER |
| CDIS | : CHROMA SIGNAL DATA |
| IOC | : DA (C) CURRENT |
| IOY | : DA (Y) CURRENT |
| SO | : SERIAL DATA |
| TEST1 – TEST4 | : TEST |

**INPUT/OUTPUT**

| | |
|---|---|
| DOC0 – DOC7 | : CHROMA SIGNAL DIGITAL |
| DOY0 – DOY7 | : LUMINANCE SIGNAL DIGITAL |
| ST | : R – G/B – G DISCRIMINATE SIGNAL FOR TITLOR |
| TIC0 – TIC6 | : DATA (C) FOR TITLOR |
| TIY0 – TIY7 | : DATA (Y) FOR TITLOR |

**OHTER**

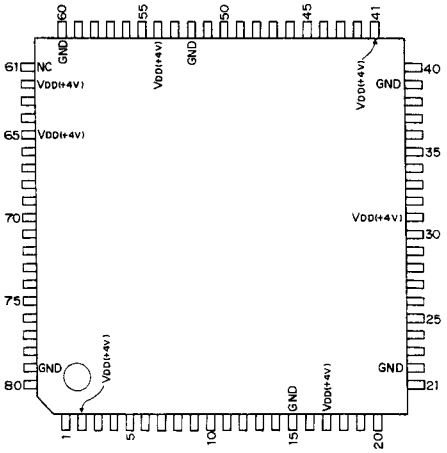
| | |
|---|---|
| AVssC | : ANALOG GND FOR DA (C) |
| AVDDC | : ANALOG POWER SUPPLY FOR DA (C) |
| AVssY | : ANALOG GND FOR DA (Y) |
| AVDDY | : ANALOG POWER SUPPLY FOR DA (Y) |
| VBC, IRFC VGC, VRFC | : DA (C) |
| IRFY, VBY VGY, VRFY | : DA (Y) |




CXD2133BR (SONY)

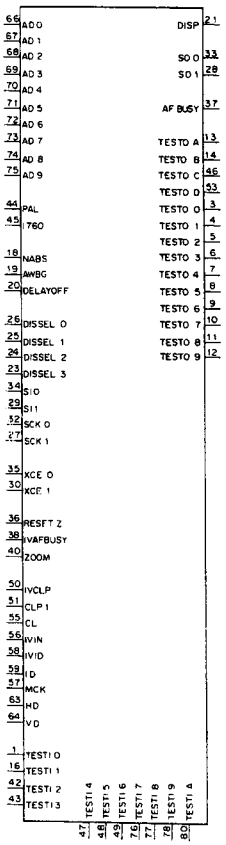
C-MOS OPTECAL DETECTOR

– TOP VIEW –




(VDD = + 4V)

| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|
| 1 | I | TESTI0 | 41 | – | VDD |
| 2 | – | VDD | 42 | I | TESTI2 |
| 3 | O | TESTO0 | 43 | I | TESTI3 |
| 4 | O | TESTO1 | 44 | I | PAL |
| 5 | O | TESTO2 | 45 | I | I760 |
| 6 | O | TESTO3 | 46 | O | TESTOC |
| 7 | O | TESTO4 | 47 | I | TESTI4 |
| 8 | O | TESTO5 | 48 | I | TESTI5 |
| 9 | O | TESTO6 | 49 | I | TESTI6 |
| 10 | O | TESTO7 | 50 | I | IVCLP |
| 11 | O | TESTO8 | 51 | I | CLP1 |
| 12 | O | TESTO9 | 52 | – | GND |
| 13 | O | TESTOA | 53 | O | TESTOD |
| 14 | O | TESTOB | 54 | – | VDD |
| 15 | – | GND | 55 | I | CL |
| 16 | I | TESTI1 | 56 | I | IVIN |
| 17 | – | VDD | 57 | I | MCK |
| 18 | I | NABS | 58 | I | IVID |
| 19 | I | AWBG | 59 | I | ID |
| 20 | I | DELAYOFF | 60 | – | GND |
| 21 | O | DISP | 61 | – | NC |
| 22 | – | GND | 62 | – | VDD |
| 23 | I | DISSEL3 | 63 | I | HD |
| 24 | I | DISSEL2 | 64 | I | VD |
| 25 | I | DISSEL1 | 65 | – | VDD |
| 26 | I | DISSEL0 | 66 | I | AD0 |
| 27 | I | SCK1 | 67 | I | AD1 |
| 28 | O | SO1 | 68 | I | AD2 |
| 29 | I | SI1 | 69 | I | AD3 |
| 30 | I | XCE1 | 70 | I | AD4 |
| 31 | – | VDD | 71 | I | AD5 |
| 32 | I | SCK0 | 72 | I | AD6 |
| 33 | O | SO0 | 73 | I | AD7 |
| 34 | I | SI0 | 74 | I | AD8 |
| 35 | I | XCE0 | 75 | I | AD9 |
| 36 | I | RESETZ | 76 | I | TESTI7 |
| 37 | O | AFBUSY | 77 | I | TESTI8 |
| 38 | I | IVAFBUSY | 78 | I | TESTI9 |
| 39 | – | GND | 79 | – | GND |
| 40 | I | ZOOM | 80 | I | TESTIA |

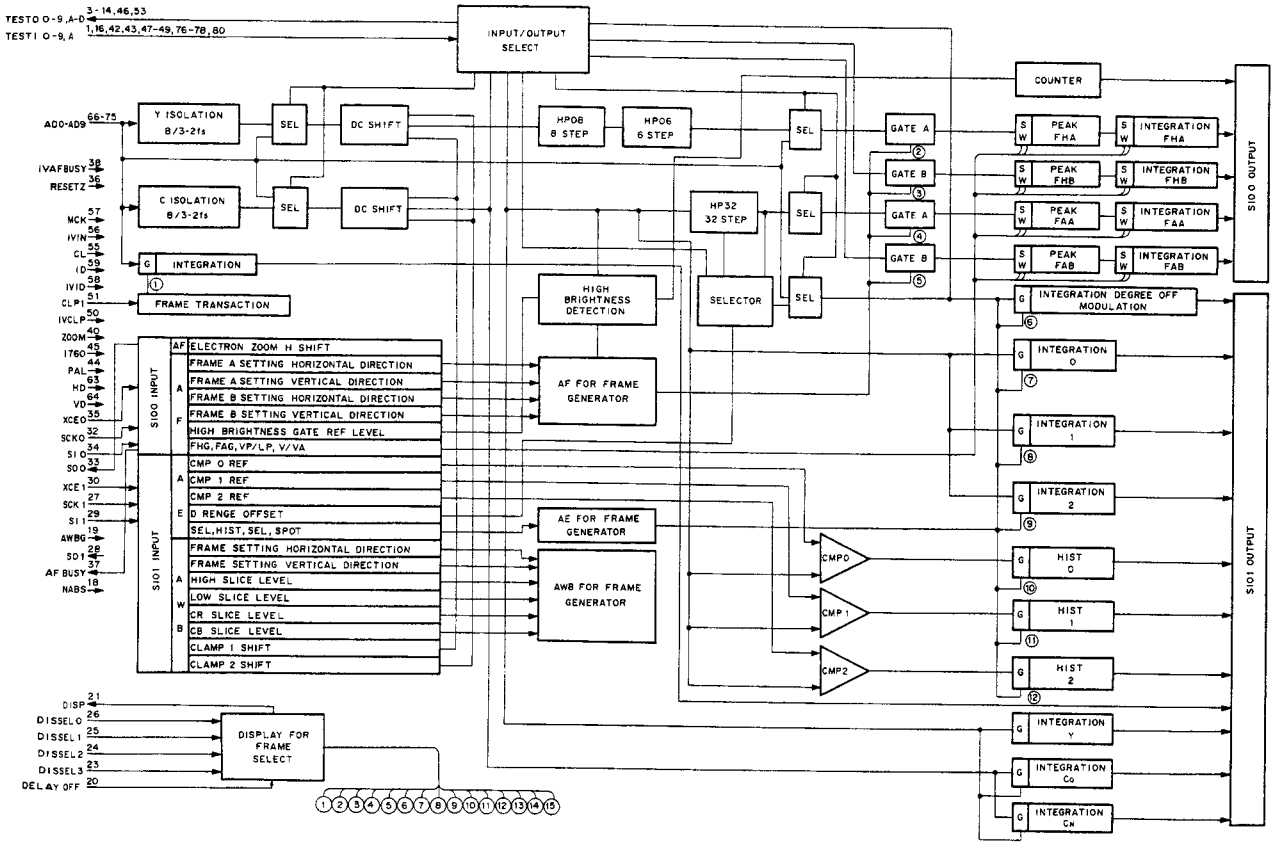


**INPUT**

| | |
|---|---|
| AD0 – AD9 | , A/D SIGNAL INPUT |
| AWBG | , EXTERNAL INPUT FOR AWB |
| CL | , 4 fsc CLOCK |
| CLP1 | , DIGITAL CLUMP PULSE |
| DELAYOFF | ; DISP (PIN – 21) SIGNAL DELAY AMOUNT CONTROL (L : WITH DELAY/H : NO DELAY) |
| DISSEL0 – DISSEL3 | ; SIGNAL SELECT FOR DISPLAY OUTPUT. |
| HD | , HD INPUT |
| ID | ; ID INPUT FOR AWB |
| IVAFBUSY | , BUSY FLAG POLARITY SWITCHING DURING AF OPERATION. (L : "H" OUTPUT DURING BUSY /H : "L" OUTPUT DURING BUSY) |
| IVCLP | ; PHASE SWITCHING FOR FETCHING CLP1. (L : RISING OF MCK/H : FALLING OF MCK) |
| IVID | ; ID POLARITY SWITCHING FOR AWB |
| IVIN | ; PHASE SWITCHING FOR FETCHING INPUT SIGNAL (L : FALLING OF MCK/H : FALLING OF MCK) |
| I760 | ; 760H/510H SWITCHING. (L : 760H/H : 510H) |
| MCK | ; MAIN CLOCK. 760H : 4 fsc, 510H : 8/3 fsc. |
| NABS | ; AF DETECTION SWITCHING (L : BOTH WAVES/H : ONE WAVE) |
| PAL | ; NSTC/PAL SWITCHING. (L : NTSC/H : PAL) |
| RESETZ | , RESET. (L : RESET/H : OPERATE) |
| SCK0 | ; SERIAL CLOCK INPUT FOR ELECTRONIC ZOOM AND AF |
| SCK1 | ; SERIAL CLOCK INPUT FOR AE AND AWB |
| SI0 | ; SERIAL INPUT FOR ELECTRONIC ZOOM AND AF |
| SI1 | ; SERIAL INPUT FOR AE AND AWB |
| TESTI0 – TESTI9, TESTIA | ; TEST. NORMALLY "L". |
| VD | ; VD INPUT |
| XCE0 | , CHIP SELECT FOR ELECTRONIC ZOOM AND AF |
| XCE1 | ; CHIP SELECT FOR AE AND AWB |
| ZOOM | ; ELECTRONIC ZOOM MODE SELECT. (L : NORMAL/H : ELECTRONIC ZOOM) |

**OUTPUT**

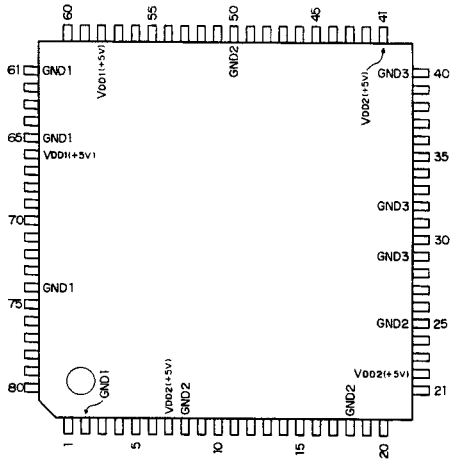
| | |
|---|---|
| AFBUSY | ; BUSY FLAG DURING AF OPERATION |
| DISP | ; DISPLAY SIGNAL |
| SO0 | ; SERIAL OUTPUT FOR ELECTRONIC ZOOM AND AF |
| SO1 | ; SERIAL OUTPUT FOR AE AND AWB |
| TESTO0 – TESTO9, TESTOA – TESTOD | , TEST. NORMALLY OPEN. |



CXD8340R (FUJITSU)

C-MOS SYNC SIGNAL/TIMING GENERATOR,VERTICAL/HORIZONTAL DRIVE LSI

– TOP VIEW –




(VDD1, VDD2 = +5V)

| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|
| 1 | O | CLOUT | 41 | – | VDD2 |
| 2 | – | GND1 | 42 | O | XSG1 |
| 3 | I | MODE1 | 43 | O | XSG2 |
| 4 | I | MODE2 | 44 | O | XSHP |
| 5 | I | MODE3 | 45 | O | XSHD |
| 6 | I | TRIG | 46 | O | XSP1 |
| 7 | – | VDD2 | 47 | O | XSP2 |
| 8 | – | GND2 | 48 | O | XDL1 |
| 9 | I | OSCIN | 49 | O | XDL2 |
| 10 | O | OSCOUT | 50 | – | GND2 |
| 11 | I | CKIN | 51 | O | BFG |
| 12 | O | XCK | 52 | O | CLP1 |
| 13 | O | WEN | 53 | O | CLP2 |
| 14 | I | ED0 | 54 | O | CLP3 |
| 15 | I | ED1 | 55 | O | CLP4 |
| 16 | I | ED2 | 56 | O | PBLK |
| 17 | O | MCK | 57 | O | ID |
| 18 | – | GND2 | 58 | – | VDD1 |
| 19 | I | SMD1 | 59 | I | HRI |
| 20 | I | SMD2 | 60 | I | VRI |
| 21 | I | HTSG | 61 | – | GND1 |
| 22 | – | VDD2 | 62 | I | LALTRI |
| 23 | O | H1 | 63 | I | EXT |
| 24 | O | H2 | 64 | O | OSC |
| 25 | – | GND2 | 65 | – | GND1 |
| 26 | O | RG | 66 | – | VDD1 |
| 27 | O | XSUBOUT | 67 | I | 4fscIN |
| 28 | I | XSUBIN | 68 | O | 4fscOUT |
| 29 | – | GND3 | 69 | O | OFLD |
| 30 | O | SUB | 70 | I | TEST1 |
| 31 | – | VH | 71 | I | TEST2 |
| 32 | – | GND3 | 72 | I | TEST3 |
| 33 | O | V2 | 73 | O | HCOMOUT |
| 34 | – | VM | 74 | – | GND1 |
| 35 | O | V1 | 75 | O | OLALT |
| 36 | – | VH | 76 | O | OBF/COLB |
| 37 | O | V3 | 77 | O | OBLK |
| 38 | – | VM | 78 | O | OSYNC |
| 39 | O | V4 | 79 | O | OHD |
| 40 | – | GND3 | 80 | O | OVD |

**INPUT**

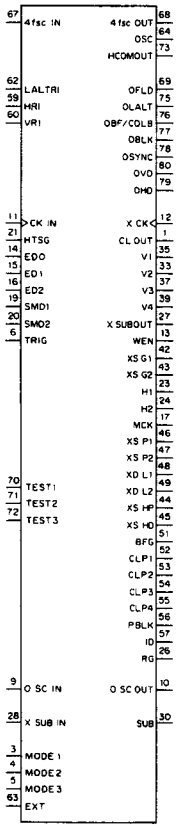
4fscIN ; INVERTER FOR OSCILLATOR
CKIN ; INVERTER FOR DUTY CONTROL
ED0 – ED2 ; SHUTTER SPEED CONTROL
EXT ; INTERNAL, EXTERNAL SYNC MODE SELECT
HRI ; HORIZONTAL RESET
HTSG ; CCD SENSOR ELECTRIC CHARGE READ OUTPUT PULSE CONTROL
LALTRI ; LINE SELECT RESET
MODE1 – MODE3 ; SYSTEM SELECT
OSCIN ; INVERTER FOR OSCILLATOR
SMD1, 2 ; SHUTTER MODE SETTING
TEST1 – TEST3 ; TEST
TRIG ; CONTINUOUS VARIABLE SHUTTER CONTROL
VRI ; VERTICAL RESET SIGNAL
XSUBIN ; CCD DISCHARGE PULSE INPUT CONTROL

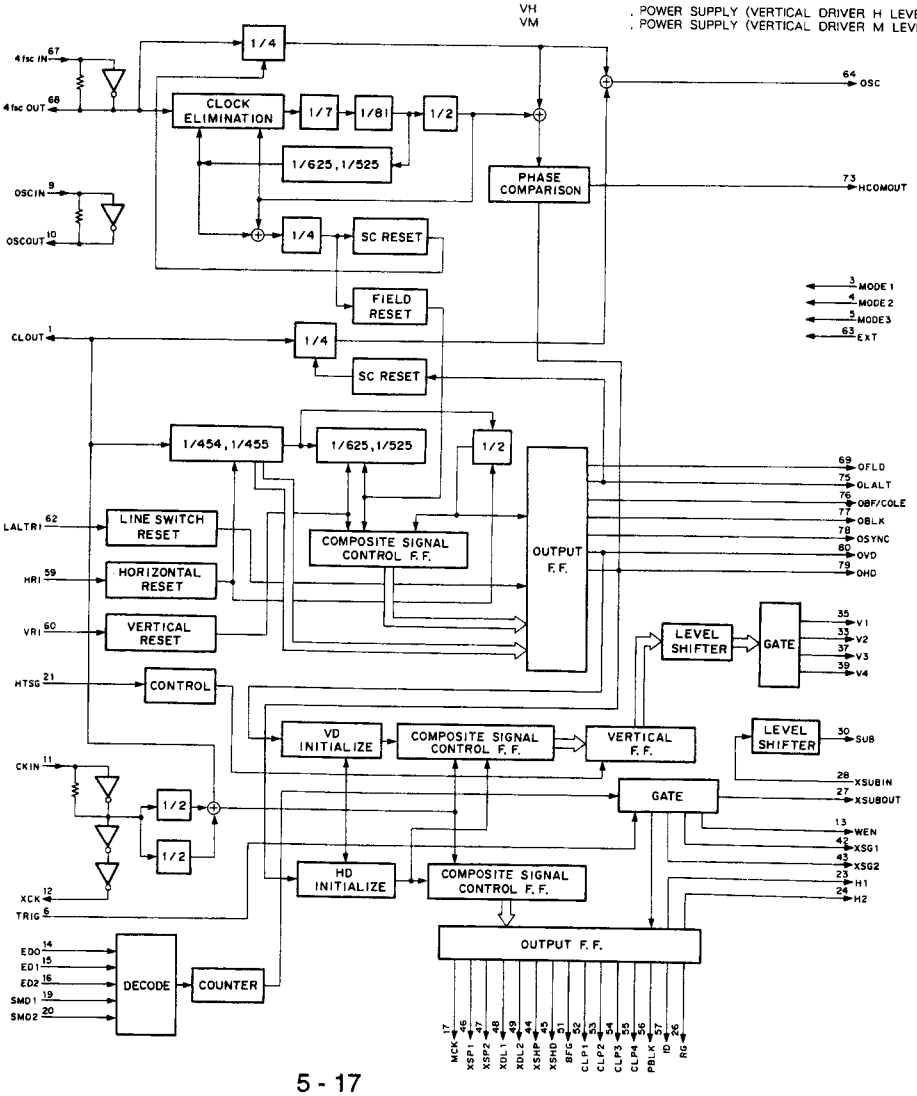
**OUTPUT**

4fsc OUT ; INVERTER FOR OSCILLATOR
BFG ; ENCODE, CHROMA MODULATOR PULSE
CLOUT ; CLOCK
CLP1 – CLP4 ; CLAMP PULSE
HCOMOUT ; PHASE COMPARATOR
H1, 2 ; CCD HORIZONTAL REGISTER DRIVING CLOCK PULSE
ID ; LINE DISCRIMINATION
MCK ; DELAY CLOCK
OBF/COLB ; BURST FLAG/COLOR BLANKING
OBLK ; COMPOSITE BLANKING
OFLD ; EVEN, ODD
OHD ; HORIZONTAL DRIVE
OLALT ; LINE SELECT
OSC ; SUB CARRIER
OSCOUT ; INVERTER FOR OSCILLATOR
OSYNC ; COMPOSITE SYNC
OVD ; VERTICAL DRIVE
PBLK ; BLANKING CLEANING PULSE
RG ; RESET GATE PULSE
SUB ; CCD DISCHARGE PULSE
V1 – V4 ; CCD VERTICAL REGISTER DRIVING CLOCK PULSE
WEN ; WRITE ENABLE
XCK ; CK IN NEGATIVE PHASE
XDL1, 2 ; DELAY LINE CLOCK
XSG1, 2 ; CCD SENSOR ELECTRIC CHARGE READ OUT PULSE
XSHD ; DATA, SAMPLE HOLD PULSE
XSHP ; PRECHARGE LEVEL, SAMPLE HOLD PULSE
XSP1, 2 ; CHROMINACE SEPARATION SAMPLE HOLD PULSE
XSUBOUT ; CCD DISCHARGE PULSE OUTPUT CONTROL

**OTHER**

VH ; POWER SUPPLY (VERTICAL DRIVER H LEVEL)
VM ; POWER SUPPLY (VERTICAL DRIVER M LEVEL)

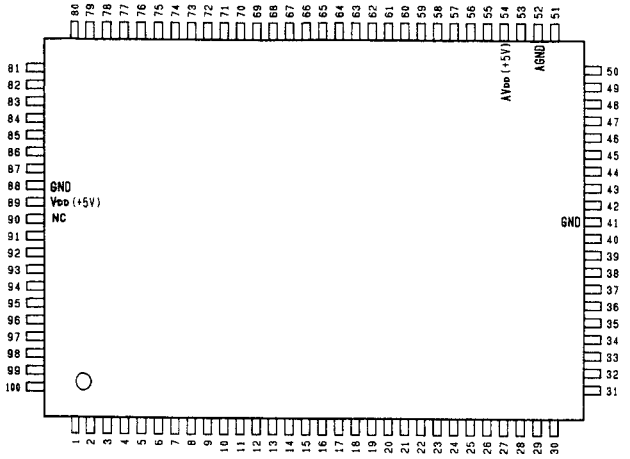


CXP80624 (SONY) FLAT PACKAGE

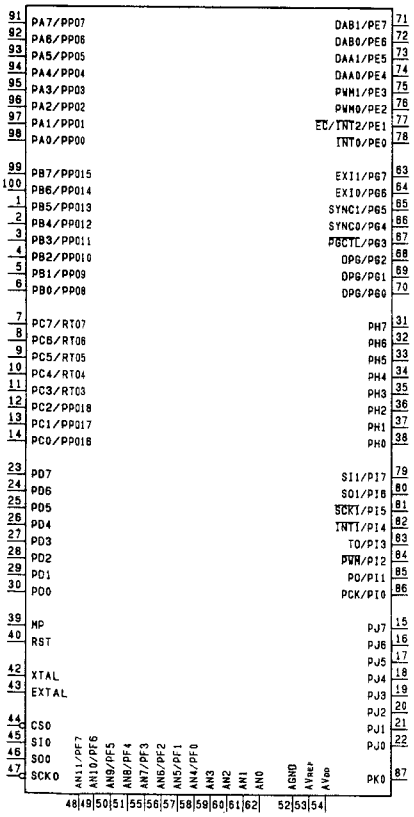
C-MOS 8-BIT 1-CHIP MICROCOMPUTER

– TOP VIEW –




(VDD = AVDD = + 5V)

| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | O | PB5/PPO13 | 26 | I/O | PD4 | 51 | I/O | PF4/AN8 | 76 | O | PE2/PWM0 |
| 2 | O | PB4/PPO12 | 27 | I/O | PD3 | 52 | – | AGND | 77 | I | PE1/EC/INT2 |
| 3 | O | PB3/PPO11 | 28 | I/O | PD2 | 53 | I | AVREF | 78 | I | PE0/INT0 |
| 4 | O | PB2/PPO10 | 29 | I/O | PD1 | 54 | – | AVDD | 79 | I/O | PI7/SI1 |
| 5 | O | PB1/PPO9 | 30 | I/O | PD0 | 55 | I | PF3/AN7 | 80 | I/O | PI6/SO1 |
| 6 | O | PB0/PPO8 | 31 | I/O | PH7 | 56 | I | PF2/AN6 | 81 | I/O | PI5/SCK1 |
| 7 | I/O | PC7/RTO7 | 32 | O | PH6 | 57 | I | PF1/AN5 | 82 | I/O | PI4/INT1 |
| 8 | I/O | PC6/RTO6 | 33 | O | PH5 | 58 | I | PF0/AN4 | 83 | I/O | PI3/TO |
| 9 | I/O | PC5/RTO5 | 34 | O | PH4 | 59 | I | AN3 | 84 | I/O | PI2/PWM |
| 10 | I/O | PC4/RTO4 | 35 | O | PH3 | 60 | I | AN2 | 85 | I/O | PI1/PO |
| 11 | I/O | PC3/RTO3 | 36 | O | PH2 | 61 | I | AN1 | 86 | I | PI0/PCK |
| 12 | I/O | PC2/PPO18 | 37 | O | PH1 | 62 | I | AN0 | 87 | I | PK0 |
| 13 | I/O | PC1/PPO17 | 38 | O | PH0 | 63 | I | PG7/EXI1 | 88 | – | GND |
| 14 | I/O | PC0/PPO16 | 39 | O | MP | 64 | I | PG6/EXI0 | 89 | – | VDD |
| 15 | I/O | PJ7 | 40 | I/O | RST | 65 | I | PG5/SYNC1 | 90 | – | NC |
| 16 | I/O | PJ6 | 41 | – | GND | 66 | I | PG4/SYNC0 | 91 | O | PA7/PPO7 |
| 17 | I/O | PJ5 | 42 | O | XTAL | 67 | I | PG3/PBCTL | 92 | O | PA6/PPO6 |
| 18 | I/O | PJ4 | 43 | I | EXTAL | 68 | I | PG2/DPG | 93 | O | PA5/PPO5 |
| 19 | I/O | PJ3 | 44 | I | CS0 | 69 | I | PG1/DFG | 94 | O | PA4/PPO4 |
| 20 | I/O | PJ2 | 45 | I | SI0 | 70 | I | PG0/CFG | 95 | O | PA3/PPO3 |
| 21 | I/O | PJ1 | 46 | O | SO0 | 71 | O | PE7/DAB1 | 96 | O | PA2/PPO2 |
| 22 | I/O | PJ0 | 47 | I/O | SCK0 | 72 | O | PE6/DAB0 | 97 | O | PA1/PPO1 |
| 23 | I/O | PD7 | 48 | I/O | PF7/AN11 | 73 | O | PE5/DAA1 | 98 | O | PA0/PPO0 |
| 24 | I/O | PD6 | 49 | I/O | PF6/AN10 | 74 | O | PE4/DAA0 | 99 | O | PB7/PPO15 |
| 25 | I/O | PD5 | 50 | I/O | PF5/AN9 | 75 | O | PE3/PWM1 | 100 | O | PB6/PPO14 |




**INPUT**

| | |
|---|---|
| AN0 – AN11 | ; A-D CONVERTOR'S ANALOG INPUTS |
| AVREF | ; A-D CONVERTOR'S REFERENCE VOLTAGE INPUT |
| CFG | ; CAPSTAN FG INPUT |
| CS0 | ; SERIAL INTERFACE CHANNLE 0 SELECT INPUT |
| DPG,DFG | ; DURM PG AND FG INPUTS |
| EC | ; EVENT CONTROL INPUT FOR TIMER/COUNTER |
| EXI0,EXI1 | ; FRC CAPTURE UNIT'S EXTERNAL INPUTS |
| EXTAL | ; CRYSTAL CONNECTION OR EXTERNAL CLOCK INPUT FOR SYSTEM CLOCK GENERATOR |
| INT0 – INT2 | ; INTERRUPT REQUEST INPUTS (FALLING EDGE ACTIVE) |
| PBCTL | ; PLAYBACK CTL PULSE INPUT |
| PCK | ; PRESCALER'S EXTERNAL CLOCK INPUT |
| PE0,PE1 | ; INPUTS OF PORT E (PE2 – PE7 ; OUTPUTS) |
| PF0 – PF3 | ; INPUTS OF PORT F (PF4 – PF7 ; OUTPUTS) |
| PG0 – PG7 | ; INPUTS OF PORT G |
| PI0 | ; INPUT OF PORT I (PI1 – PI7 ; INPUTS/OUTPUTS) |
| PK0 | ; INPUT OF PORT K |
| SI0,SI1 | ; SERIAL DATA INPUTS (CHANNLE 0 AND CHANNLE 1) |
| SYNC0,SYNC1 | ; COMPOSITE SYNC SIGNAL INPUTS |

**OUTPUT**

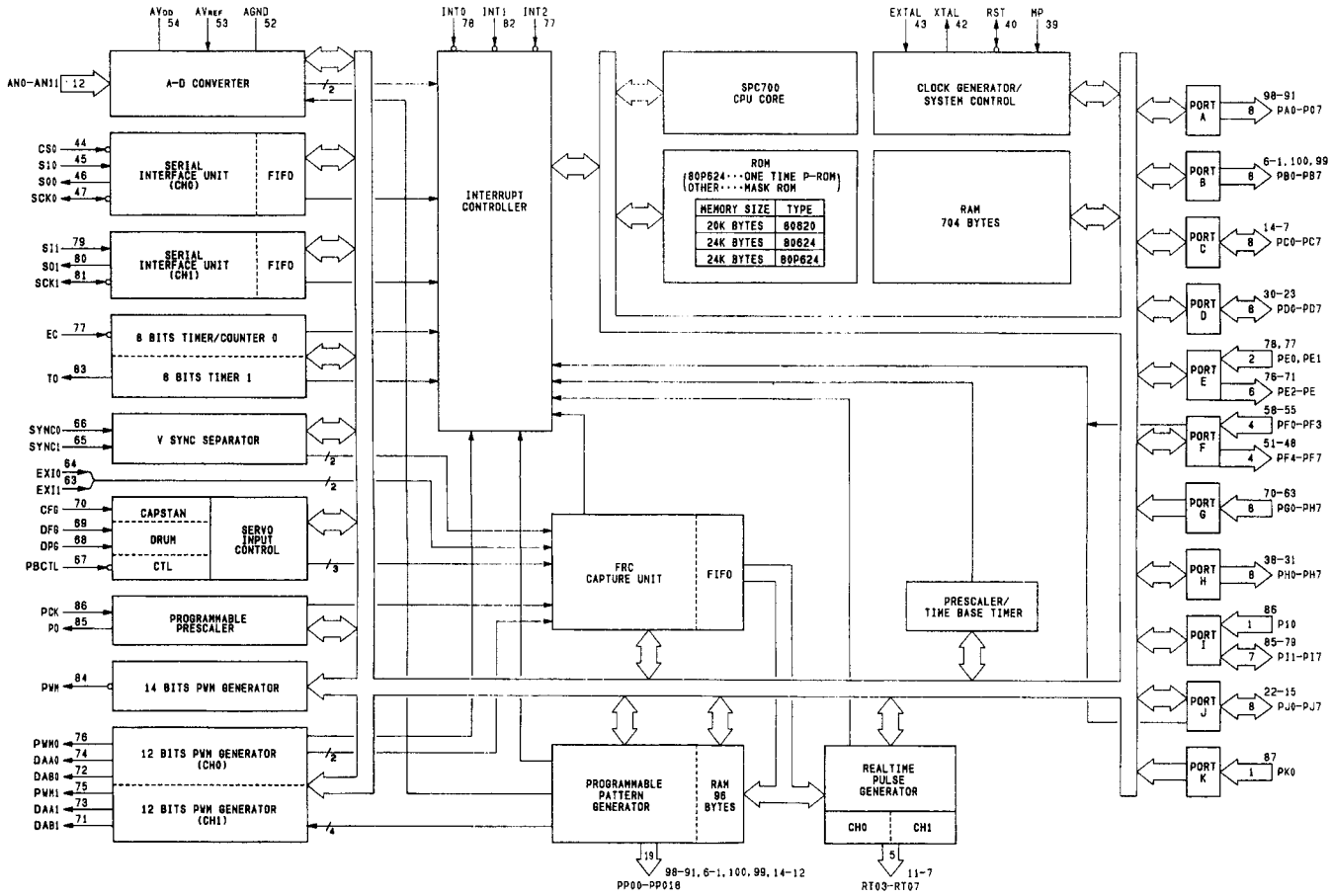
| | |
|---|---|
| DAA0,DAB0 | ; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 0) |
| DAA1,DAB1 | ; DA GATE PULSE OUTPUTS (12 BITS PWM CHANNLE 1) |
| MP | ; MICROPROCESSOR MODE INPUT |
| PA0 – PA7 | ; OUTPUTS OF PORT A |
| PB0 – PB7 | ; OUTPUTS OF PORT B |
| PE2 – PE7 | ; OUTPUTS OF PORT E (PE0, PE1 ; INPUTS) |
| PF4 – PF7 | ; OUTPUTS OF PORT F (PF0 – PF3 ; INPUTS) |
| PH0 – PH7 | ; OUTPUTS OF PORT H (N-CH OPEN DRAIN OUTPUTS) |
| PPO0 – PPO18 | ; PROGRAMMABLE PATTERN GENERATOR OUTPUS |
| PO | ; PRESCALER OUTPUT |
| PWM | ; PULSE WIDTH MODULATION OUTPUT |
| PWM0,PWM1 | ; 12 BITS PULSE WIDTH MODULATION OUTPUTS (CHANNLE 0 AND CHANNLE 1) |
| RTO3 – RTO7 | ; REALTIME PULSE GENERATOR OUTPUTS |
| SO0,SO1 | ; SERIAL DATA OUTPUTS (CHANNLE 0 AND CHANNLE 1) |
| TO | ; TIMER/COUNTER OUTPUT (DUTY 50%) |
| XTAL | ; CRYSTAL CONNECTION |

**INPUT/OUTPUT**

| | |
|---|---|
| PC0 – PC7 | ; INPUTS/OUTPUTS OF PROT C (BIT PROGRAMMABLE) |
| PD0 – PD7 | ; INPUTS/OUTPUTS OF PROT D (4 BITS PROGRAMMABLE) |
| PI1 – PI7 | ; INPUTS/OUTPUTS OF PROT I (BIT PROGRAMMABLE, PI0 ; INPUT) |
| PJ0 – PJ7 | ; INPUTS/OUTPUTS OF PROT J (BIT PROGRAMMABLE) |
| RST | ; SYSTEM RESET INPUT AND POWER ON RESET OUTPUT |
| SCK0,SCK1 | ; SERIAL CLOCK INPUTS/OUTPUTS (CHANNLE 0 AND CHANNLE 1) |

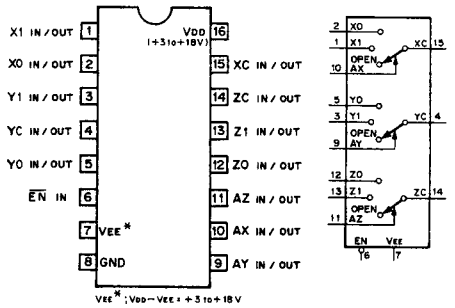
**OTHER**

| | |
|---|---|
| AGND | ; A-D CONVERTOR'S GROUND |
| AVDD (+ 5V) | ; A-D CONVERTOR'S VDD |




HD14053BFP (HITACHI) FLAT PACKAGE
MC14053BF (MOTOROLA) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
– TOP VIEW –

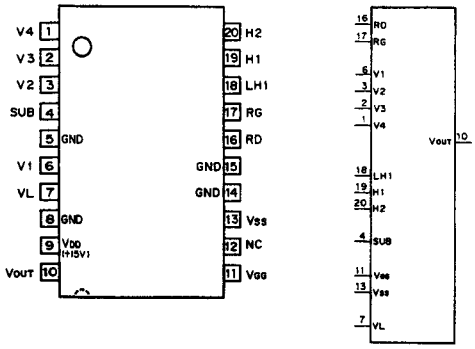



| CONT. INPUTS | | ON |
|---|---|---|
| EN | A (X, Y, Z) | CHANNEL |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | X | OPEN |

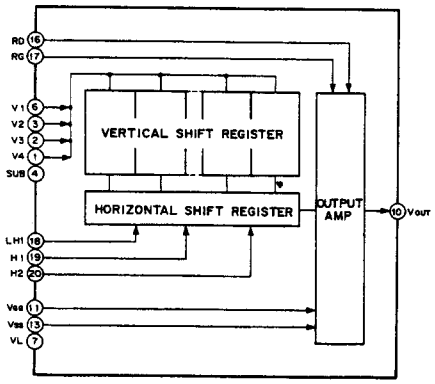
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

ICX038BNA (SONY) (NTSC,COLOR)
ICX039BNA (SONY) (PAL,COLOR)

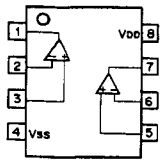
1/2-INCH CCD IMAGE BLOCK
– BOTTOM VIEW –




H1, H2 ; HORIZONTAL REGISTER TRANSFER CLOCK
LH1 ; HORIZONTAL REGISTER LAST STAGE TRANSFER CLOCK
RD ; RESET DRAIN BIAS
RG ; RESET GATE CLOCK
SUB ; OVERFLOW DRAIN
VGG ; OUTPUT AMP GATE BIAS
VL ; PROTECTION TRANSISTOR BIAS
VSS ; OUTPUT AMP SOURCE
V1 – V4 ; VERTICAL REGISTER TRANSFER CLOCK
VOUT ; SIGNAL OUTPUT

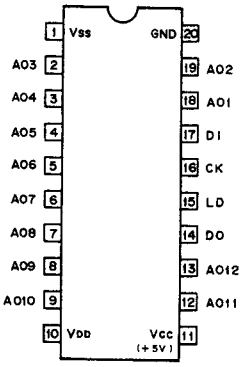


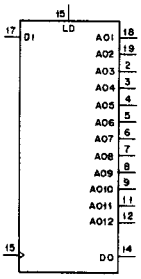

MC14577CF (MOTOROLA) FLAT PACKAGE
C-MOS DUAL VIDEO AMPLIFIERS
– TOP VIEW –




※VDD + |VSS| = +5V to +12V

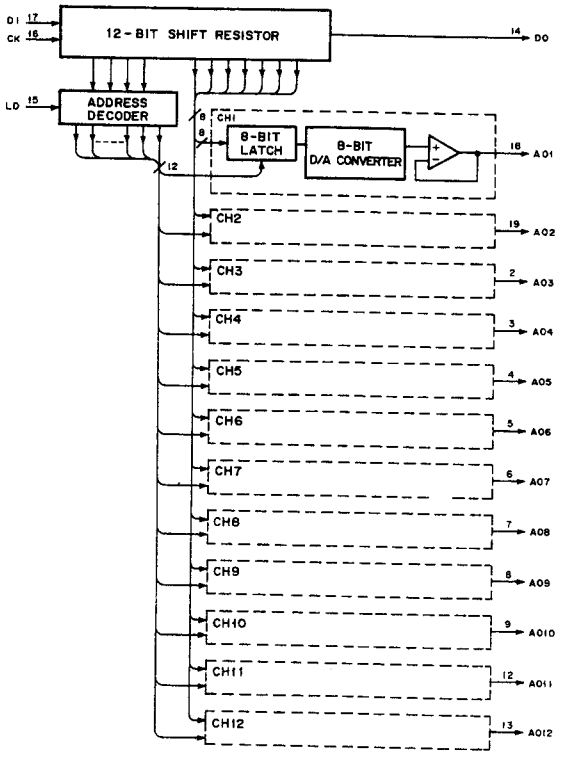
M62352GP (MITSUBISHI) FLAT PACKAGE
C-MOS 8-BITx12 CHANNEL D/A CONVERTER
(WITH BUFFER OPERATIONAL AMPLIFIER)
– TOP VIEW –



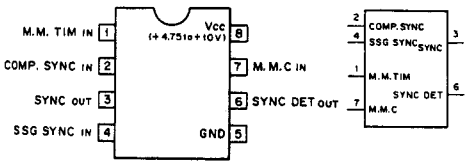



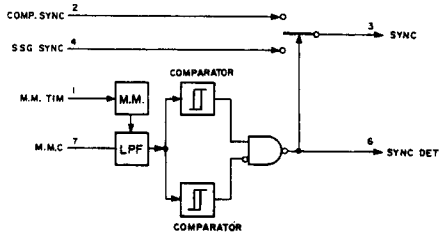

A01 – A012 ; 8-BIT D/A OUTPUT
CK ; CLOCK INPUT
DI ; SERIAL DATA INPUT
DO ; DATA OUTPUT

NOTE :
3.5V < VDD < VCC
– 3.5V < VSS < VCC

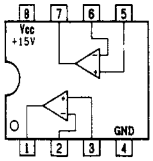


NJM2230M (JRC) FLAT PACKAGE
VIDEO SIGNAL DETECTOR
- TOP VIEW -

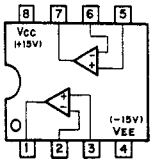


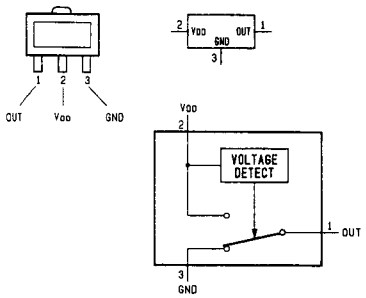

NJM3414M (JRC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIER
- TOP VIEW -



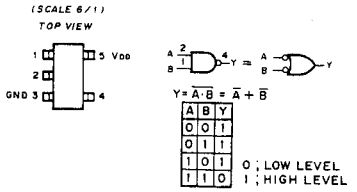

NJM4558M (JRC) FLAT PACKAGE
UPC4558G2 (NEC) FLAT PACKAGE
DUAL OPERATIONAL AMPLIFIER
- TOP VIEW -




S-8054ALB-LM-S (SEIKO I AND E) 4.00-4.30V
C-MOS VOLTAGE DETECTOR
- TOP VIEW -




SC7S00F (MOTOROLA) CHIP PACKAGE
TC7S00F (TOSHIBA) CHIP PACKAGE
C-MOS 2-INPUT NAND GATE

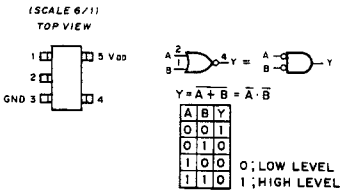



| A | B | Y |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

0 ; LOW LEVEL
1 ; HIGH LEVEL

| TYPE | VDD |
|---|---|
| 7S00F<br>7S00FU | +2 to +6V |
| 4S11F<br>4SU11F | +3 to +18V |

SC7S02F (MOTOROLA) CHIP PACKAGE
TC7S02F (TOSHIBA) CHIP PACKAGE
C-MOS 2-INPUT NOR GATE

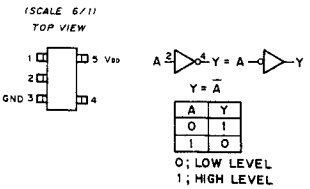



| A | B | Y |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

0 ; LOW LEVEL
1 ; HIGH LEVEL

| TYPE | VDD |
|---|---|
| 4S01F | +3 to +18V |
| 7S02F | +2 to +6V |

SC7S04F (MOTOROLA) CHIP PACKAGE
TC7S04F (TOSHIBA) CHIP PACKAGE
TC7SU04F (TOSHIBA) CHIP PACKAGE
C-MOS INVERTER

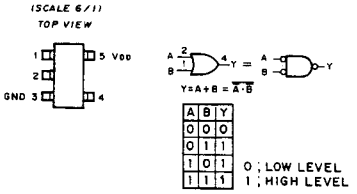



| A | Y |
|---|---|
| 0 | 1 |
| 1 | 0 |

0; LOW LEVEL
1; HIGH LEVEL

| TYPE | VDD |
|---|---|
| 7S04F<br>7SU04F | +2 to +6V |
| 4S69F<br>4SU69F | +3 to +18V |

SC7S32F (MOTOROLA) CHIP PACKAGE
TC7S32F (TOSHIBA) CHIP PACKAGE
C-MOS 2-INPUT OR GATE

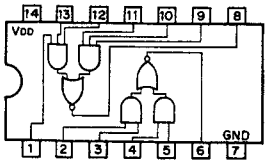


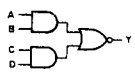

| A | B | Y |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

0 ; LOW LEVEL
1 ; HIGH LEVEL

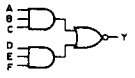
| TYPE | VDD |
|---|---|
| 7S32F<br>7S32FU | +2 to +6V |
| 4S71F | +3 to +18V |

SN74HC51NS (TI) FLAT PACKAGE
TC74HC51AF (TOSHIBA) FLAT PACKAGE
C-MOS DUAL AND/OR INVERT GATE
- TOP VIEW -

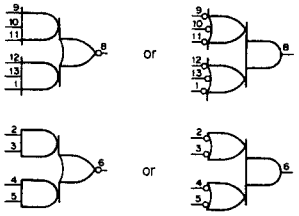



$Y = \overline{A \cdot B + C \cdot D}$



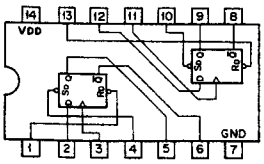

$Y = \overline{A \cdot B \cdot C + D \cdot E \cdot F}$




NOTE :

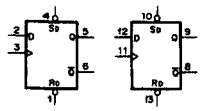
| TYPE | VDD |
|---|---|
| TC40H | +2 to +8V |
| OTHERS | +2 to +6V |

SN74HC74ANS (TI) FLAT PACKAGE
C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
- TOP VIEW -




| INPUTS | | | | OUTPUTS | |
|---|---|---|---|---|---|
| $\overline{S_D}$ | $\overline{R_D}$ | CK | D | Qn+1 | $\overline{Qn+1}$ |
| 0 | 1 | X | X | 1 | 0 |
| 1 | 0 | X | X | 0 | 1 |
| 0 | 0 | X | X | 1 | 1 |
| 1 | 1 | ↑ | 1 | 1 | 0 |
| 1 | 1 | ↑ | 0 | 0 | 1 |
| 1 | 1 | 0 | X | Qn | $\overline{Qn}$ |

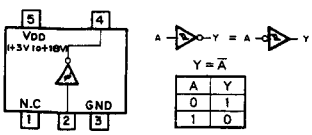
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE



NOTE :

| TYPE | VDD |
|---|---|
| HCT/ACT | +5V |
| TC74AC/VHC | +2 to +5.5V |
| OTHERS | +2 to +6V |

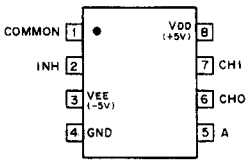
TC4S584F (TOSHIBA) FLAT PACKAGE
C-MOS SCHMITT TRIGGER INVERTER
- TOP VIEW -

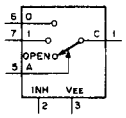



| A | Y |
|---|---|
| 0 | 1 |
| 1 | 0 |

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC4W53F (TOSHIBA) FLAT PACKAGE
C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER
- TOP VIEW -

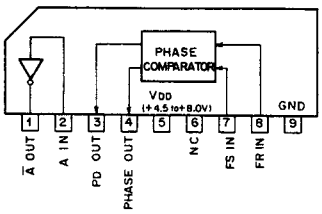


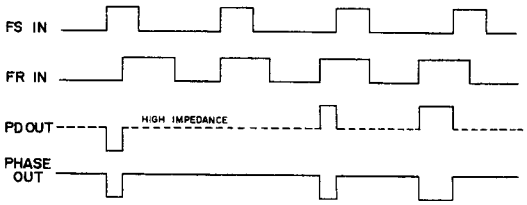

| CONT. INPUT | | ON CHANNEL |
|---|---|---|
| INH | A | |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | X | OPEN |

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

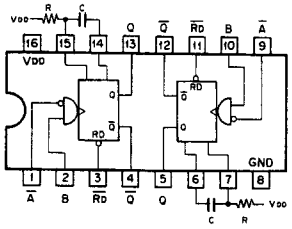
TC5081AP (TOSHIBA)
C-MOS PHASE COMPARATOR
- SIDE VIEW -




PHASE COMPARATOR TIMING CHART



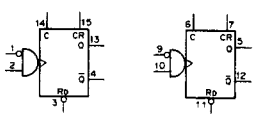

TC74HC123AF (TOSHIBA) FLAT PACKAGE
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS
- TOP VIEW -




| INPUT | | | OUTPUT | |
|---|---|---|---|---|
| RD | A | B | Q | $\overline{Q}$ |
| 0 | X | X | 0 | 1 |
| 1 | 1 | X | 0 | 1 |
| 1 | X | 0 | 0 | 1 |
| 1 | 0 | ↑ | ↑ | ↓ |
| 1 | ↓ | 1 | ↑ | ↓ |
| ↓ | 0 | 1 | ↑ | ↓ |

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

OUTPUT PULSE WIDTH = 0.46CR



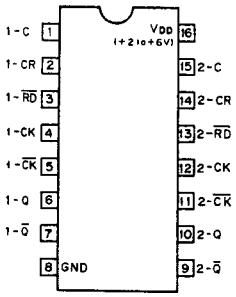
NOTE :

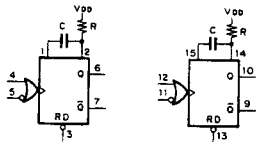
| TYPE | VDD |
|---|---|
| TC74HCT123AF | +5V |
| OTHER TYPES | +2 to +6V |

TC74HC4538AF (TOSHIBA) FLAT PACKAGE

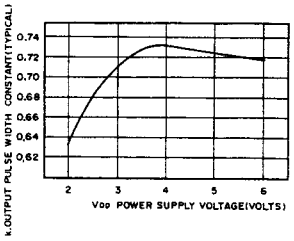
C-MOS DUAL RETRIGGERABLE / NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

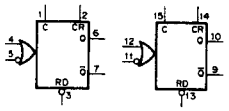
– TOP VIEW –



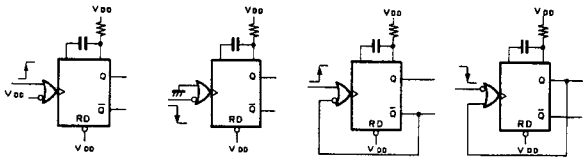
OUTPUT PULSE WIDTH = k·C·R



RETRIGGERABLE M.M.V

NON-RETRIGGERABLE M.M.V

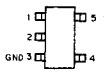


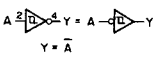
TC7S14FU (TOSHIBA) CHIP PACKAGE

C-MOS SCHMITT TRIGGER INVERTER

(SCALE 6/1)

TOP VIEW




Y = $\overline{A}$

| A | Y |
|---|---|
| 0 | 1 |
| 1 | 0 |

0 ; LOW LEVEL
1 ; HIGH LEVEL

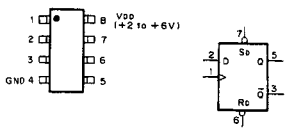
| TYPE | VDD |
|---|---|
| 7S14FU | +2 to +6V |

TC7W74FU (TOSHIBA) CHIP PACKAGE

C-MOS D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET

(SCALE 3/1)

– TOP VIEW –



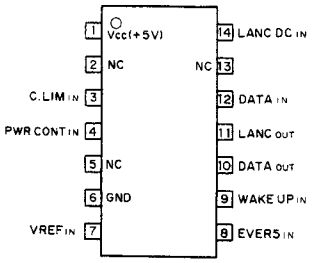

| INPUTS | | | | OUTPUTS | |
|---|---|---|---|---|---|
| $\overline{SD}$ | $\overline{RD}$ | CK | D | Qn+1 | $\overline{Qn+1}$ |
| 0 | 1 | X | X | 1 | 0 |
| 1 | 0 | X | X | 0 | 1 |
| 0 | 0 | X | X | 1 | 1 |
| 1 | 1 | ↑ | 1 | 1 | 0 |
| 1 | 1 | ↑ | 0 | 0 | 1 |
| 1 | 1 | ↓ | X | Qn | $\overline{Qn}$ |

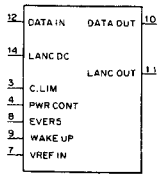
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

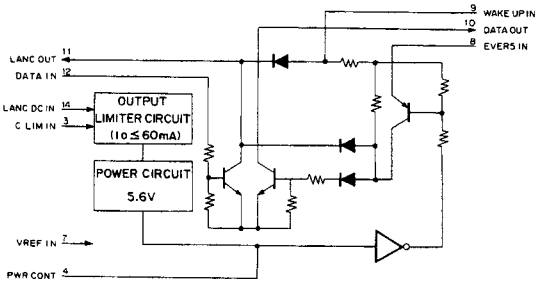
TL1596CPW (TI) FLAT PACKAGE

LANC TRANSCEIVER

– TOP VIEW –



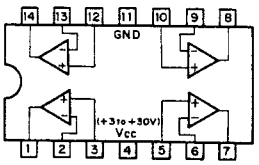




UPC324G2 (NEC) FLAT PACKAGE

QUAD OPERATIOAL AMPLIFIERS

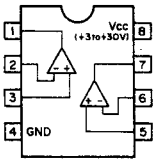
– TOP VIEW –




UPC358G2 (NEC) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIERS

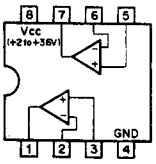
– TOP VIEW –

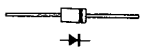



UPC393G2 (NEC) FLAT PACKAGE

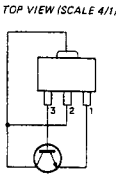
DUAL VOLTAGE COMPARATORS

– TOP VIEW –

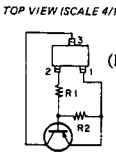




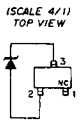
11EQS10



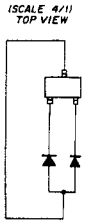

2SC3617



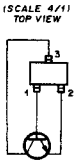

DTA114EU
(R1 = 10K, R2 = 10K)



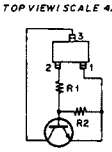

RD ? ?M-B
RD ? ?M-B ?



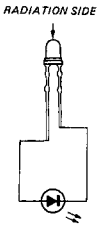

1SS181
MA141WA



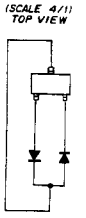

2SC4116



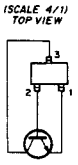

DTC114EU
(R1 = 10K, R2 = 10K)



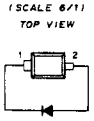

SLR-34MG3F ; GREEN



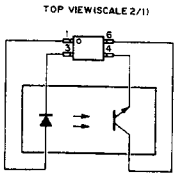

1SS226
MA143




2SC4178

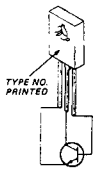



MA110

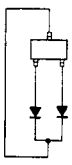



TLP121

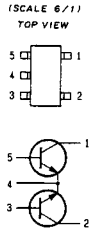
1T33C



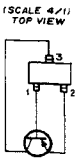

2SD669A



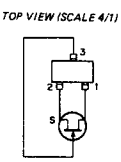

MA141WK



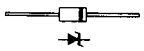

XN1501




2SA1586




2SK300



RD ? ?ESB ?

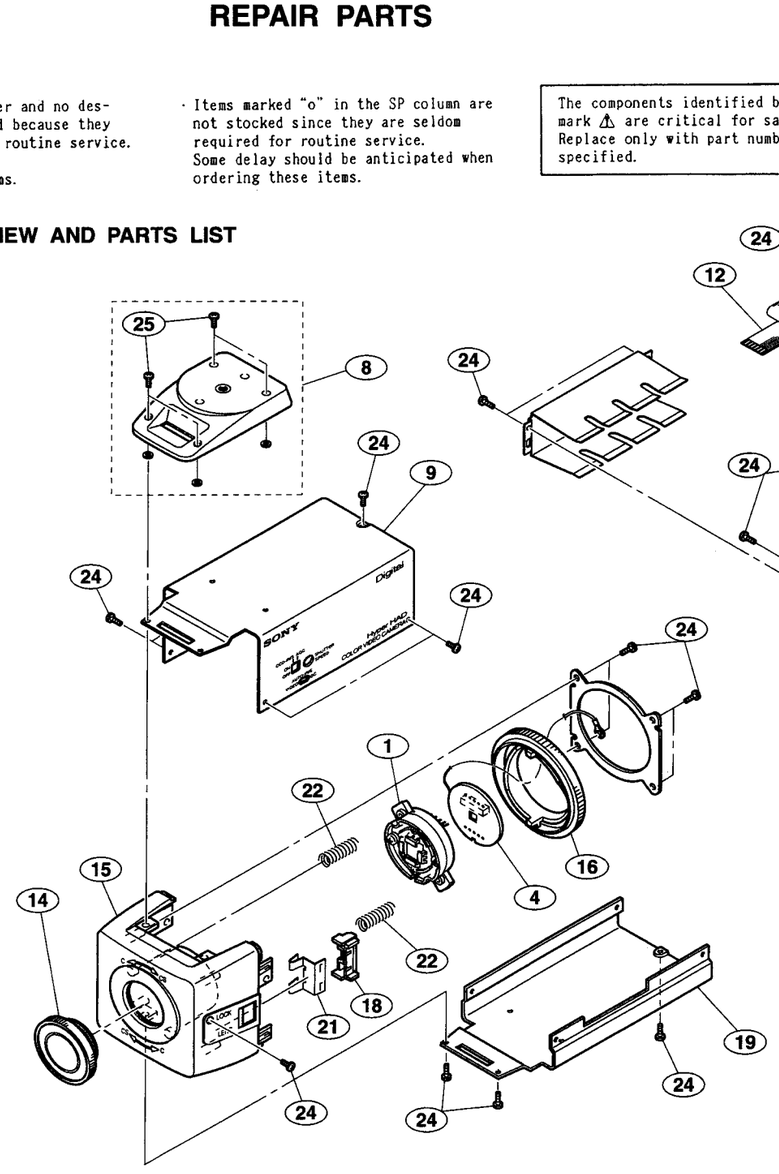
# SECTION 6
# REPAIR PARTS

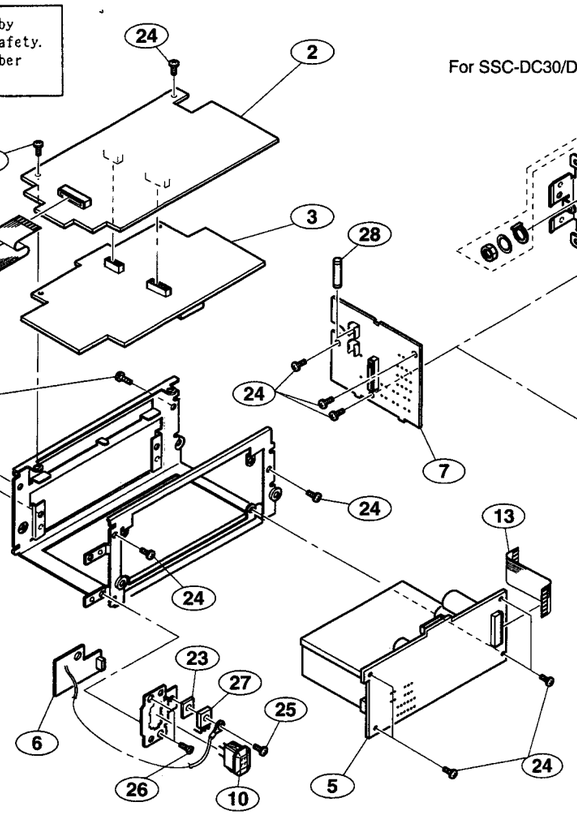
【NOTE】

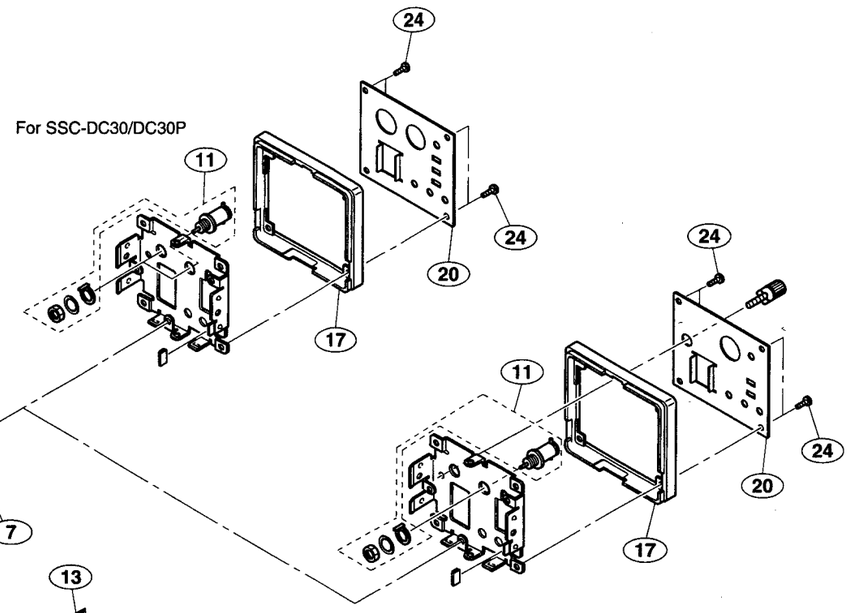
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- All resistors are in ohms.
- Items marked "o" in the SP column are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ are critical for safety. Replace only with part number specified.

## 6-1. EXPLODED VIEW AND PARTS LIST








| No. | Part No. | SP | Description |
|---|---|---|---|
| 1 | A-8263-294-A | s | BLOCK ASSY, FILTER (For Service) :SSC-DC30/DC34 |
| | A-8263-295-A | s | BLOCK ASSY, FILTER (For Service) :SSC-DC30P |
| 2 | A-8275-682-A | o | MOUNTED CIRCUIT BOARD, DPR-53N :SSC-DC30/DC34 |
| | A-8275-680-A | o | MOUNTED CIRCUIT BOARD, DPR-53P :SSC-DC30P |
| 3 | A-8275-683-A | o | MOUNTED CIRCUIT BOARD, FC-64N :SSC-DC30 |
| | A-8275-681-A | o | MOUNTED CIRCUIT BOARD, FC-64P :SSC-DC30P |
| | A-8275-677-A | o | MOUNTED CIRCUIT BOARD, FC-64 N2 :SSC-DC34 |
| 4 | A-8276-899-A | o | MOUNTED CIRCUIT BOARD, BI-79 |
| 5 | A-8276-900-A | o | MOUNTED CIRCUIT BOARD, PSW-26 :SSC-DC30/30P |
| | A-8276-896-A | o | MOUNTED CIRCUIT BOARD, PSW-27 :SSC-DC34 |
| 6 | A-8276-901-A | o | MOUNTED CIRCUIT BOARD, IR-16 |
| 7 | A-8276-902-A | o | MOUNTED CIRCUIT BOARD, CT-143 :SSC-DC30/30P |
| | A-8276-897-A | o | MOUNTED CIRCUIT BOARD, CT-144 :SSC-DC34 |
| 8 | A-8310-252-A | o | ADAPTOR ASSY, TRI |
| 9 | X-3678-062-2 | o | CASE, UPPER ASSY |
| 10 | 1-580-172-11 | s | CONNECTOR, MICRO (RECEPTACLE) 4P |
| 11 | 1-580-724-11 | s | CONNECTOR, BNC |
| 12 | 1-766-287-11 | s | WIRE, FLEXIBLE CARD 14P |
| 13 | 1-766-288-11 | s | WIRE, FLEXIBLE CARD 16P |
| 14 | 2-042-385-00 | s | CAP, C MOUNT |
| 15 | 3-679-547-01 | o | PANEL, FRONT |
| 16 | 3-679-549-02 | o | RING, ADJUST |
| 17 | 3-679-550-01 | o | FRAME, REAR |
| 18 | 3-679-555-01 | o | LOCKBASE, RING |
| 19 | 3-679-558-01 | o | CASE, LOWER |
| 20 | 3-679-559-01 | o | PLATE, REAR :SSC-DC30/30P |
| | 3-679-558-01 | o | PLATE, REAR :SSC-DC34 |
| 21 | 3-679-561-01 | o | SPRING, LOCK BASE |
| 22 | 3-679-565-01 | o | SPRING, COMPRESSION |
| 23 | 4-386-536-01 | s | SHEET, SILICON :SSC-DC30/30P Only |
| 24 | 7-621-772-10 | s | SCREW +B 2X4 |
| 25 | 7-621-772-30 | s | SCREW +B 2X6 |
| 26 | 7-627-452-28 | s | SCREW, PRECISION +K 2X4 |
| 27 | 8-729-306-92 | s | TRANSISTOR 2SD669A-C :SSC-DC30/30P Only |
| 28 | ⚠1-532-737-11 | s | FUSE, GLASS TUBE :SSC-DC34 Only |

SSC-DC30/DC30P/DC34

## 6-2. ELECTRICAL PARTS LIST

BI-79 BOARD

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8276-899-A | o | MOUNTED CIRCUIT BOARD, BI-79 |
| C101 | 1-162-966-11 | s | CERAMIC, CHIP 0.0022uF 10% 50V |
| C102 | 1-135-177-21 | s | TANTALUM, CHIP 1uF 10% 20V |
| C103 | 1-135-213-21 | s | TANTALUM, CHIP 3.3uF 20% 25V |
| C104 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C105 | 1-135-177-21 | s | TANTALUM, CHIP 1uF 10% 20V |
| C106 | 1-135-318-11 | s | TANTALUM, CHIP 33uF 20% 4V |
| C107 | 1-135-213-21 | s | TANTALUM, CHIP 3.3uF 20% 25V |
| C108 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C109 | 1-135-214-21 | s | TANTALUM 4.7uF 20% 20V |
| CN101 | 1-569-118-11 | s | CONNECTOR, FPC (Z1F(I)TYPE) 14P |
| Q101 | 8-765-420-02 | s | TRANSISTOR 2SK300-3 |
| Q102 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG |
| R101 | 1-216-828-11 | s | METAL, CHIP 3.9K 5% 1/16W |
| R102 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R103 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R104 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R105 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R106 | 1-216-838-11 | s | METAL, CHIP 27K 5% 1/16W |
| R108 | 1-218-705-11 | s | METAL 3.6K 0.50% 1/16W |

CT-143 BOARD (SSC-DC30/30P)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8276-902-A | o | MOUNTED CIRCUIT BOARD, CT-143 |
| 1pc | 3-185-014-01 | o | SPACER, TERMINAL TABLE |
| C501 | 1-162-288-31 | s | CERAMIC 330PF 10% 50V |
| CN501 | 1-766-289-11 | s | CONNECTOR, FPC 16P |
| CN502 | 1-537-315-11 | s | TERMINAL BOARD |
| D501 | 8-719-980-40 | s | DIODE SLR-34MG3F |
| D502 | 8-719-109-89 | s | DIODE RD5.6ES-B2 |
| D503 | 8-719-109-89 | s | DIODE RD5.6ES-B2 |
| D504 | 8-719-110-83 | s | DIODE RD36ES-B2 |
| D505 | 8-719-109-89 | s | DIODE RD5.6ES-B2 |
| F501 | ⚠1-532-775-51 | s | FUSE, MICRO (SECONDARY) |
| FL501 | 1-236-071-11 | s | ENCAPSULATED COMPONENT |
| R501 | 1-249-435-11 | s | CARBON 33K 5% 1/4W |
| R503 | 1-249-435-11 | s | CARBON 33K 5% 1/4W |
| R504 | 1-249-421-11 | s | CARBON 2.2K 5% 1/4W |
| R505 | 1-249-435-11 | s | CARBON 33K 5% 1/4W |
| R506 | 1-249-412-11 | s | CARBON 390 5% 1/4W |
| R507 | 1-215-394-00 | s | METAL 75 1% 1/6W |
| SW501 | 1-570-472-11 | s | SWITCH, KEY BOARD |
| SW502 | 1-570-472-11 | s | SWITCH, KEY BOARD |
| SW503 | 1-570-313-11 | s | SWITCH, KEY BOARD |
| SW504 | 1-572-529-11 | s | SWITCH, SLIDE |
| SW505 | 1-572-529-11 | s | SWITCH, SLIDE |
| SW506 | 1-572-528-11 | s | SWITCH, SLIDE |

CT-144 BOARD (SSC-DC34)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8276-897-A | o | MOUNTED CIRCUIT BOARD, CT-144 |
| 1pc | 3-185-014-01 | o | SPACER, TERMINAL TABLE |
| C601 | 1-165-379-91 | s | CERAMIC 0.0022uF 10% 500V |
| C602 | 1-165-379-91 | s | CERAMIC 0.0022uF 10% 500V |
| CN601 | 1-766-289-11 | s | CONNECTOR, FPC 16P |
| CN602 | 1-537-315-11 | s | TERMINAL BOARD |
| D601 | 8-719-980-40 | s | DIODE SLR-34MG3F |
| D602 | 8-719-109-89 | s | DIODE RD5.6ES-B2 |
| D603 | 8-719-109-89 | s | DIODE RD5.6ES-B2 |
| FH601 | 1-533-146-00 | o | HOLDER, FUSE |
| FH602 | 1-533-146-00 | o | HOLDER, FUSE |
| R601 | 1-249-435-11 | s | CARBON 33K 5% 1/4W |
| R602 | 1-249-435-11 | s | CARBON 33K 5% 1/4W |
| R604 | 1-249-421-11 | s | CARBON 2.2K 5% 1/4W |
| R605 | 1-249-435-11 | s | CARBON 33K 5% 1/4W |
| SW601 | 1-570-472-11 | s | SWITCH, KEY BOARD |
| SW602 | 1-570-472-11 | s | SWITCH, KEY BOARD |
| SW603 | 1-570-313-11 | s | SWITCH, KEY BOARD |
| SW604 | 1-572-529-11 | s | SWITCH, SLIDE |
| SW605 | 1-572-529-11 | s | SWITCH, SLIDE |

DPR-53 BOARD

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8275-680-A | o | MOUNTED CIRCUIT BOARD, DPR-53P :SSC-DC30P |
| 1pc | A-8275-682-A | o | MOUNTED CIRCUIT BOARD, DPR-53N :SSC-DC30/DC34 |
| C201 | 1-135-070-00 | s | TANTALUM, CHIP 0.1uF 10% 35V |
| C202 | 1-135-212-21 | s | TANTALUM, CHIP 2.2uF 20% 35V |
| C203 | 1-135-152-21 | s | TANTALUM, CHIP 1.5uF 10% 25V |
| C204 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C205 | 1-164-004-11 | s | CERAMIC, CHIP 0.1uF 10% 25V |
| C206 | 1-126-403-11 | s | ELECT 3.3uF 20% 50V |
| C207 | 1-135-162-21 | s | TANTALUM, CHIP 33uF 10% 6.3V |
| C208 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C209 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C210 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C211 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C212 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C213 | 1-135-135-21 | s | TANTALUM, CHIP 4.7uF 10% 35V |
| C214 | 1-135-135-21 | s | TANTALUM, CHIP 4.7uF 10% 35V |
| C215 | 1-162-927-11 | s | CERAMIC, CHIP 100PF 5% 50V |
| C216 | 1-162-919-11 | s | CERAMIC, CHIP 22PF 5% 50V |
| C218 | 1-135-177-21 | s | TANTALUM, CHIP 1uF 10% 20V |
| C220 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C221 | 1-126-399-11 | s | ELECT, CHIP 10uF 20% 35V |
| C222 | 1-162-964-11 | s | CERAMIC 0.001uF 10% 50V |
| C223 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C224 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C225 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C226 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C227 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C228 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C229 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C230 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C231 | 1-126-394-11 | s | ELECT, CHIP 10uF 20% 16V |
| C232 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C233 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C234 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C235 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C236 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C237 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C238 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C239 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C240 | 1-162-964-11 | s | CERAMIC 0.001uF 10% 50V |
| C245 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C246 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C247 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C248 | 1-135-177-21 | s | TANTALUM, CHIP 1uF 10% 20V |
| C249 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C250 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C251 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C252 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C253 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C254 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C255 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C256 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C257 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C258 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C259 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C260 | 1-162-920-11 | s | CERAMIC, CHIP 27PF 5% 50V |
| C261 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |

(DPR-53 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C262 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C263 | 1-162-919-11 | s | CERAMIC, CHIP 22PF 5% 50V |
| C265 | 1-162-910-11 | s | CERAMIC 5PF 0.25PF 50V |
| C266 | 1-162-910-11 | s | CERAMIC 5PF 0.25PF 50V |
| C267 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C268 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C270 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C271 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C273 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C278 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C282 | 1-126-391-11 | s | ELECT, CHIP 47uF 20% 6.3V |
| C286 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C291 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C292 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C293 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C294 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C295 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C296 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C300 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C302 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C304 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C306 | 1-162-921-11 | s | CERAMIC, CHIP 33PF 5% 50V |
| C308 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C310 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C311 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C312 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C313 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C314 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C315 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C316 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C317 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C318 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C319 | 1-164-363-11 | s | CERAMIC 560PF 5% 50V |
| C320 | 1-164-363-11 | s | CERAMIC 560PF 5% 50V |
| C321 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C322 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C324 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C325 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C326 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C327 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C328 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C329 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C330 | 1-135-216-11 | s | TANTALUM 10uF 20% 10V |
| C331 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C332 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC34 |
| C333 | 1-162-919-11 | s | CERAMIC, CHIP 22PF 5% 50V |
| C334 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C335 | 1-162-928-11 | s | CERAMIC 120PF 5% 50V :SSC-DC30P |
| C335 | 1-164-218-11 | s | CERAMIC 180PF 0.25PF 50V :SSC-DC30/DC34 |
| C336 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C337 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C338 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C339 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C341 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C342 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C343 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C344 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C345 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |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SSC-DC30/DC30P/DC34

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(DPR-53 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C346 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C347 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C348 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C349 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C350 | 1-162-919-11 | s | CERAMIC, CHIP 22PF 5% 50V |
| C351 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C353 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C354 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C355 | 1-131-341-00 | s | TANTALUM 0.1uF 10% 35V |
| C356 | 1-162-910-11 | s | CERAMIC 5PF 0.25PF 50V |
| CN201 | 1-580-789-21 | s | PIN, CONNECTOR (SMD) 6P |
| CN202 | 1-766-290-21 | s | CONNECTOR, FPC 14P |
| CN203 | 1-766-293-21 | s | CONNECTOR, BOARD TO BOARD 24P |
| CN204 | 1-766-292-21 | s | CONNECTOR, BOARD TO BOARD 18P |
| CT201 | 1-141-423-61 | s | CAP, ADJ 20PF |
| D209 | 8-719-800-76 | s | DIODE 1SS226 |
| D210 | 8-719-820-05 | s | DIODE 1SS181 |
| D211 | 8-719-820-05 | s | DIODE 1SS181 |
| D212 | 8-719-404-46 | s | DIODE MA110 |
| D213 | 8-719-820-05 | s | DIODE 1SS181 |
| D214 | 8-719-820-05 | s | DIODE 1SS181 |
| D215 | 8-719-404-46 | s | DIODE MA110 :SSC-DC30/DC34 |
| D216 | 8-713-300-88 | s | DIODE 1T33C-01 |
| D217 | 8-719-404-46 | s | DIODE MA110 |
| FL201 | 1-236-206-11 | s | FILTER, BAND PASS :SSC-DC30/DC34 |
| FL201 | 1-236-265-11 | s | FILTER, BAND PASS :SSC-DC30P |
| IC201 | 8-752-054-61 | s | IC CXA1390AR |
| IC202 | 8-759-258-40 | s | IC CXD8340R |
| IC203 | 8-752-053-26 | s | IC CXA1399Q |
| IC204 | 8-759-258-39 | s | IC CXD8835M |
| IC205 | 8-759-038-46 | s | IC SC7S00F |
| IC206 | 8-759-038-46 | s | IC SC7S00F |
| IC207 | 8-759-038-46 | s | IC SC7S00F |
| IC209 | 8-759-243-19 | s | IC TC7SU04F |
| IC211 | 8-752-060-50 | s | IC CXA1577R |
| IC212 | 8-759-100-96 | s | IC UPC4558G2 |
| IC213 | 8-759-262-36 | s | IC CXD2133BR-T6 |
| IC214 | 8-752-350-13 | s | IC CXD2130R |
| IC215 | 8-752-339-46 | s | IC CXD1177Q |
| IC216 | 8-759-242-64 | s | IC TC4W53F |
| IC217 | 8-759-177-66 | s | IC TC7S14FU-TE85L |
| IC218 | 8-752-033-67 | s | IC CXA1229M |
| IC219 | 8-759-035-93 | s | IC TC7S32F-TE85L |
| IC220 | 8-759-038-46 | s | IC SC7S00F :SSC-DC30/DC34 |
| IC221 | 8-759-031-84 | s | IC SC7S04F |
| IC222 | 8-759-243-19 | s | IC TC7SU04F |
| IC223 | 8-759-038-46 | s | IC SC7S00F |
| L201 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L203 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L204 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L206 | 1-410-373-31 | s | INDUCTOR CHIP 2.2uH |
| L207 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L208 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L209 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L210 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L213 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L214 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |

(DPR-53 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| L215 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L216 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L217 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L218 | 1-410-381-11 | s | INDUCTOR CHIP 10uH |
| Q201 | 8-729-402-13 | s | TRANSISTOR XN1501 |
| Q202 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q203 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q204 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q205 | 8-729-402-13 | s | TRANSISTOR XN1501 |
| Q206 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q207 | 8-729-907-00 | s | TRANSISTOR DTC114EU |
| Q209 | 8-729-144-56 | s | TRANSISTOR 2SC3617 |
| Q210 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG |
| Q211 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q212 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG |
| Q213 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q214 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q215 | 8-729-117-72 | s | TRANSISTOR 2SC4178 |
| R201 | 1-216-847-11 | s | METAL, CHIP 150K 5% 1/16W |
| R202 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R203 | 1-216-834-11 | s | METAL, CHIP 12K 5% 1/16W |
| R204 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R205 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R206 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R207 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R208 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R209 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R210 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R211 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R212 | 1-216-797-11 | s | METAL, CHIP 10 5% 1/16W |
| R213 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R214 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R216 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R217 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W |
| R218 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R219 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R220 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R221 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R222 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R223 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R224 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R225 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R226 | 1-216-864-11 | s | METAL, CHIP 0-OHM :SSC-DC30/DC34 |
| R227 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R228 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R229 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R230 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R231 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W :SSC-DC30P |
| R232 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R233 | 1-216-828-11 | s | METAL, CHIP 3.9K 5% 1/16W |
| R234 | 1-216-828-11 | s | METAL, CHIP 3.9K 5% 1/16W |
| R235 | 1-216-832-11 | s | METAL, CHIP 8.2K 5% 1/16W |
| R236 | 1-216-805-11 | s | METAL, CHIP 47 5% 1/16W |
| R240 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R241 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R242 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R244 | 1-216-801-11 | s | METAL 22 0.50% 1/16W |
| R245 | 1-216-828-11 | s | METAL, CHIP 3.9K 5% 1/16W |

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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R246 | 1-216-828-11 | s | METAL, CHIP 3.9K 5% 1/16W |
| R247 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R249 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R250 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R251 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R252 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R253 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R256 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R257 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R259 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R260 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R265 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W :SSC-DC30P |
| R264 | 1-216-864-11 | s | METAL, CHIP 0-OHM :SSC-DC30/DC34 |
| R266 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R268 | 1-216-827-11 | s | METAL, CHIP 3.3K 5% 1/16W |
| R269 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R270 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R271 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R272 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R273 | 1-216-812-11 | s | METAL, CHIP 180 5% 1/16W |
| R274 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R275 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R276 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R277 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R278 | 1-216-827-11 | s | METAL, CHIP 3.3K 5% 1/16W |
| R279 | 1-216-817-11 | s | METAL, CHIP 470 5% 1/16W |
| R280 | 1-216-817-11 | s | METAL, CHIP 470 5% 1/16W |
| R281 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R282 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R283 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R284 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R285 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R286 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R288 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W :SSC-DC30P |
| R289 | 1-216-864-11 | s | METAL, CHIP 0-OHM :SSC-DC30/DC34 |
| R290 | 1-218-881-11 | s | METAL, CHIP 27K 0.50% 1/16W |
| R293 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R294 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R295 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W :SSC-DC30P |
| R296 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R297 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R298 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R299 | 1-216-832-11 | s | METAL, CHIP 8.2K 5% 1/16W |
| R300 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R301 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R302 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R304 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W :SSC-DC30/DC34 |
| R305 | 1-216-819-11 | s | METAL, CHIP 680 5% 1/16W |
| R307 | 1-216-826-11 | s | METAL, CHIP 2.7K 5% 1/16W |
| R308 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R311 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R312 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W :SSC-DC30/DC34 |
| X201 | 1-579-619-11 | s | VIBRATOR, CRYSTAL 28.636363MHz :SSC-DC30/DC34 |
| X201 | 1-579-621-11 | s | VIBRATOR, CRYSTAL 28.375MHz :SSC-DC30P |

(DPR-53 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| X202 | 1-579-466-11 | s | VIBRATOR, CRYSTAL 3.579545MHz :SSC-DC30/DC34 |
| X202 | 1-579-661-21 | s | OSCILLATOR, CRYSTAL 4.433619MHz :SSC-DC30P |

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FC-64 BOARD
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8275-677-A | o | MOUNTED CIRCUIT BOARD, FC-64 N2 :SSC-DC34 |
| 1pc | A-8275-681-A | o | MOUNTED CIRCUIT BOARD, FC-64P :SSC-DC30P |
| 1pc | A-8275-683-A | o | MOUNTED CIRCUIT BOARD, FC-64N :SSC-DC30 |
| C803 | 1-164-676-11 | s | CERAMIC 2200PF 5% 16V |
| C806 | 1-164-315-11 | s | CERAMIC 470PF 5% 50V |
| C808 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C809 | 1-162-968-11 | s | CERAMIC, CHIP 0.0047uF 10% 50V :SSC-DC30/DC30P |
| C810 | 1-126-393-11 | s | ELECT 33uF 20% 10V |
| C811 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C812 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C814 | 1-135-177-21 | s | TANTALUM, CHIP 1uF 10% 20V |
| C815 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C816 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C817 | 1-126-394-11 | s | ELECT, CHIP 10uF 20% 16V |
| C818 | 1-162-969-11 | s | CERAMIC 0.0068uF 10% 25V |
| C819 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C820 | 1-162-974-11 | s | CERAMIC 0.01uF 50V :SSC-DC30/DC30P |
| C821 | 1-164-357-11 | s | CERAMIC 1000PF 5% 50V :SSC-DC30/DC30P |
| C822 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C825 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C826 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C827 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V |
| C828 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C829 | 1-164-676-11 | s | CERAMIC 2200PF 5% 16V :SSC-DC30/DC30P |
| C831 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C832 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C833 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C834 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C835 | 1-164-676-11 | s | CERAMIC 2200PF 5% 16V :SSC-DC30/DC30P |
| C837 | 1-164-676-11 | s | CERAMIC 2200PF 5% 16V :SSC-DC30/DC30P |
| C838 | 1-164-357-11 | s | CERAMIC 1000PF 5% 50V :SSC-DC30/DC30P |
| C839 | 1-126-394-11 | s | ELECT, CHIP 10uF 20% 16V |
| C840 | 1-135-180-21 | s | TANTALUM, CHIP 3.3uF 20% 6.3V :SSC-DC30/DC30P |
| C841 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C842 | 1-162-974-11 | s | CERAMIC 0.01uF 50V :SSC-DC30/DC30P |
| C843 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C844 | 1-164-004-11 | s | CERAMIC, CHIP 0.1uF 10% 25V |
| C845 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C846 | 1-135-216-11 | s | TANTALUM 10uF 20% 10V |
| C847 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C848 | 1-126-394-11 | s | ELECT, CHIP 10uF 20% 16V |
| C849 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C852 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C853 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C856 | 1-164-357-11 | s | CERAMIC 1000PF 5% 50V :SSC-DC30/DC30P |
| C857 | 1-135-180-21 | s | TANTALUM, CHIP 3.3uF 20% 6.3V |
| C858 | 1-126-390-11 | s | ELECT, CHIP 22uF 20% 6.3V |
| C861 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C864 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |

(FC-64 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C865 | 1-126-392-11 | s | ELECT, CHIP 100uF 20% 6.3V |
| C866 | 1-135-216-11 | s | TANTALUM 10uF 20% 10V |
| C867 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C868 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C869 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C870 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C871 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C872 | 1-135-210-11 | s | TANTALUM 4.7uF 20% 10V :SSC-DC30/DC30P |
| C873 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C874 | 1-126-394-11 | s | ELECT, CHIP 10uF 20% 16V |
| C875 | 1-126-394-11 | s | ELECT, CHIP 10uF 20% 16V |
| C876 | 1-135-145-11 | s | TANTALUM, CHIP 0.47uF 10% 35V |
| C878 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C879 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C881 | 1-135-162-21 | s | TANTALUM, CHIP 33uF 10% 6.3V |
| C882 | 1-128-394-11 | s | ELECT 220uF 20% 10V |
| C883 | 1-128-393-11 | s | ELECT 100uF 20% 10V |
| C884 | 1-126-392-11 | s | ELECT, CHIP 100uF 20% 6.3V |
| C885 | 1-128-403-21 | s | ELECT 47uF 20% 35V |
| C887 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C888 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C889 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C890 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C891 | 1-128-592-11 | s | ELECT 0.33uF 20% 50V |
| C893 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C894 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C895 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C896 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C897 | 1-126-603-11 | s | ELECT 4.7uF 20% 35V |
| C898 | 1-128-595-11 | s | ELECT 2.2uF 20% 50V |
| C899 | 1-126-603-11 | s | ELECT 4.7uF 20% 35V |
| C900 | 1-128-394-11 | s | ELECT 220uF 20% 10V |
| C901 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C904 | 1-126-395-11 | s | ELECT, CHIP 22uF 20% 16V |
| C905 | 1-164-315-11 | s | CERAMIC 470PF 5% 50V :SSC-DC30/DC30P |
| C906 | 1-162-958-11 | s | CERAMIC 270PF 5% 50V :SSC-DC30/DC30P |
| C907 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C908 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C909 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C910 | 1-165-321-11 | s | CERAMIC, CHIP 0.68uF 10% 16V :SSC-DC30/DC30P |
| C911 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V :SSC-DC30/DC30P |
| C912 | 1-164-156-11 | s | CERAMIC 0.1uF 25V :SSC-DC30/DC30P |
| C913 | 1-135-091-91 | s | TANTALUM 1uF 20% 16V :SSC-DC30/DC30P |
| C913 | 1-135-259-11 | s | TANTALUM, CHIP 10uF 20% 6.3V :SSC-DC34 |
| CN801 | 1-766-295-21 | s | CONNECTOR, BOARD TO BOARD 24P |
| CN802 | 1-573-314-21 | s | CONNECTOR, BOARD TO BOARD 28P |
| CN803 | 1-766-294-21 | s | CONNECTOR, BOARD TO BOARD 18P |
| CN804 | 1-580-057-11 | s | PIN, CONNECTOR 4P |
| D802 | 8-719-820-05 | s | DIODE 1SS181 |
| D803 | 8-719-800-76 | s | DIODE 1SS226 |
| D804 | 8-719-820-05 | s | DIODE 1SS181 |
| D805 | 8-719-820-05 | s | DIODE 1SS181 |
| D806 | 8-719-820-05 | s | DIODE 1SS181 |

(FC-64 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| D807 | 8-719-404-46 | s | DIODE MA110 |
| D808 | 8-719-157-36 | s | DIODE RD6.8M-B |
| D809 | 8-719-200-91 | s | DIODE 11EQS10 :SSC-DC30/DC30P |
| FL801 | 1-236-894-11 | s | FILTER, LOW PASS |
| FL802 | 1-415-848-21 | s | DELAY LINE, LC :SSC-DC30/DC34 |
| FL802 | 1-415-865-21 | s | DELAY LINE, LC :SSC-DC30P |
| IC801 | 8-759-031-84 | s | IC SC7S04F |
| IC802 | 8-759-925-90 | s | IC SN74HC74NS |
| IC803 | 8-759-239-34 | s | IC TC74HC4538AF |
| IC804 | 8-759-701-24 | s | IC NJM3414M |
| IC806 | 8-759-245-41 | s | IC TC4S584F-TE85L |
| IC807 | 8-759-239-55 | s | IC TC74HC123AF :SSC-DC30/DC30P |
| IC808 | 8-759-925-90 | s | IC SN74HC74NS |
| IC809 | 8-759-100-94 | s | IC UPC358G2 |
| IC810 | 8-759-239-55 | s | IC TC74HC123AF :SSC-DC30/DC30P |
| IC811 | 8-759-100-95 | s | IC UPC324G2 |
| IC812 | 8-759-250-81 | s | IC TC5081AP |
| IC813 | 8-759-262-03 | s | IC MC14577CF |
| IC814 | 8-759-710-12 | s | IC NJM2230M :SSC-DC30/DC30P |
| IC815 | 8-759-031-84 | s | IC SC7S04F |
| IC816 | 8-759-100-93 | s | IC UPC393G2 |
| IC817 | 8-759-300-71 | s | IC HD14053BFP |
| IC818 | 8-759-262-03 | s | IC MC14577CF |
| IC819 | 8-759-925-88 | s | IC SN74HC51NS |
| IC820 | 8-752-363-39 | s | IC CXK1024M-TH |
| IC821 | 8-759-031-84 | s | IC SC7S04F |
| IC822 | 8-759-635-27 | s | IC M62352GP-E1 |
| IC823 | 8-752-850-67 | s | IC CXP80624-479R |
| IC825 | 8-759-059-05 | s | IC TL1596CPW |
| IC826 | 8-759-937-56 | s | IC S-8054ALB-LM-S |
| IC829 | 8-759-245-41 | s | IC TC4S584F-TE85L :SSC-DC30/DC30P |
| IC830 | 8-759-083-94 | s | IC TC7W74FU-TE12R :SSC-DC30/DC30P |
| IC831 | 8-759-245-41 | s | IC TC4S584F-TE85L :SSC-DC30/DC30P |
| IC832 | 8-759-083-94 | s | IC TC7W74FU-TE12R :SSC-DC30/DC30P |
| IC833 | 8-759-035-93 | s | IC TC7S32F-TE85L :SSC-DC30/DC30P |
| IC834 | 8-759-100-93 | s | IC UPC393G2 :SSC-DC30/DC30P |
| IC836 | 8-759-031-84 | s | IC SC7S04F :SSC-DC30/DC30P |
| L801 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L803 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L804 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L805 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L806 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L807 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L808 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L809 | 1-412-032-11 | s | INDUCTOR CHIP 100uH |
| L810 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L811 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| Q801 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG :SSC-DC30/DC30P |
| Q802 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG :SSC-DC30/DC30P |
| Q805 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG :SSC-DC30/DC30P |
| Q807 | 8-729-920-99 | s | TRANSISTOR DTA114EU |
| Q808 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q809 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG |
| Q810 | 8-729-907-00 | s | TRANSISTOR DTC114EU |
| Q811 | 8-729-144-56 | s | TRANSISTOR 2SC3617 |

(FC-64 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R801 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W :SSC-DC30/DC30P |
| R802 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W :SSC-DC30/DC30P |
| R803 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W :SSC-DC30/DC30P |
| R804 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W :SSC-DC30/DC30P |
| R805 | 1-216-864-11 | s | METAL, CHIP 0-OHM :SSC-DC34 |
| R808 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R809 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R811 | 1-216-864-11 | s | METAL, CHIP 0-OHM :SSC-DC30/DC34 |
| R812 | 1-216-864-11 | s | METAL, CHIP 0-OHM :SSC-DC30P |
| R813 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R815 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W :SSC-DC30/DC30P |
| R816 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W :SSC-DC30/DC30P |
| R817 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W :SSC-DC30/DC30P |
| R818 | 1-216-817-11 | s | METAL, CHIP 470 5% 1/16W |
| R820 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R822 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R823 | 1-218-741-11 | s | METAL, CHIP 110K 0.50% 1/16W |
| R824 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R825 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R826 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R827 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R829 | 1-216-849-11 | s | METAL, CHIP 220K 5% 1/16W |
| R830 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W :SSC-DC30/DC30P |
| R831 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R832 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R833 | 1-216-805-11 | s | METAL, CHIP 47 5% 1/16W |
| R834 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R835 | 1-216-809-11 | s | METAL, CHIP 100 5% 1/16W |
| R836 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R837 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R838 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W :SSC-DC30/DC30P |
| R839 | 1-216-806-11 | s | METAL 56 5% 1/16W |
| R840 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W :SSC-DC30/DC30P |
| R841 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R842 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R843 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R844 | 1-216-835-11 | s | METAL, CHIP 15K 5% 1/16W :SSC-DC30/DC30P |
| R845 | 1-216-832-11 | s | METAL, CHIP 8.2K 5% 1/16W |
| R846 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W :SSC-DC30/DC30P |
| R847 | 1-216-819-11 | s | METAL 680 5% 1/16W :SSC-DC30P |
| R847 | 1-216-820-11 | s | METAL, CHIP 820 5% 1/16W :SSC-DC30/DC34 |
| R848 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R849 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R850 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R851 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R853 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R854 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R855 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W :SSC-DC30/DC30P |

(FC-64 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R856 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R857 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R858 | 1-216-838-11 | s | METAL, CHIP 27K 5% 1/16W |
| R859 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R860 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R861 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R862 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R863 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R864 | 1-218-695-11 | s | METAL 1.3K 0.50% 1/16W |
| R865 | 1-216-824-11 | s | METAL, CHIP 1.8K 5% 1/16W |
| R866 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R867 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R868 | 1-218-727-11 | s | METAL, CHIP 30K 0.50% 1/16W :SSC-DC30P |
| R868 | 1-218-881-11 | s | METAL, CHIP 27K 0.50% 1/16W :SSC-DC30 |
| R869 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R870 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R871 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R872 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R873 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R876 | 1-216-827-11 | s | METAL, CHIP 3.3K 5% 1/16W |
| R879 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W :SSC-DC30/DC34 |
| R880 | 1-216-831-11 | s | METAL, CHIP 6.8K 5% 1/16W |
| R881 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R882 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R884 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R885 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R886 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R887 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R888 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R889 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R890 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R891 | 1-218-721-11 | s | METAL 16K 0.50% 1/16W |
| R895 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W :SSC-DC30P |
| R897 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R898 | 1-216-826-11 | s | METAL, CHIP 2.7K 5% 1/16W |
| R899 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R900 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R901 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R902 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R903 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R904 | 1-218-285-11 | s | METAL, CHIP 75 5% 1/16W |
| R905 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R910 | 1-216-824-11 | s | METAL, CHIP 1.8K 5% 1/16W |
| R912 | 1-216-838-11 | s | METAL, CHIP 27K 5% 1/16W :SSC-DC30/30P |
| R913 | 1-216-838-11 | s | METAL, CHIP 27K 5% 1/16W :SSC-DC30/30P |
| R914 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R915 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W :SSC-DC30/30P |
| R916 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W :SSC-DC30/30P |
| R917 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W :SSC-DC30/30P |
| R918 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W :SSC-DC30/30P |
| R919 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W :SSC-DC30/30P |

(FC-64 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R920 | 1-216-811-11 | s | METAL, CHIP 150 5% 1/16W :SSC-DC30/30P |
| R921 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W :SSC-DC30/30P |
| R922 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W :SSC-DC30/30P |
| X801 | 1-579-553-11 | s | VIBRATOR, LITHIUM |

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IR-16 BOARD
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8276-901-A | o | MOUNTED CIRCUIT BOARD, IR-16 |
| CN751 | 1-573-305-11 | s | CONNECTOR, BOARD TO BOARD 10P |
| L751 | 1-412-027-11 | s | INDUCTOR CHIP 2.2uH |

PSW-26 BOARD (SSC-DC30/DC30P)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8276-900-A | o | MOUNTED CIRCUIT BOARD, PSW-26 |
| C401 | 1-126-950-11 | s | ELECT 330uF 20% 35V |
| C402 | 1-126-399-11 | s | ELECT, CHIP 10uF 20% 35V |
| C403 | 1-128-391-11 | s | ELECT 330uF 20% 6.3V |
| C404 | 1-162-974-11 | s | CERAMIC 0.01uF 50V |
| C405 | 1-128-391-11 | s | ELECT 330uF 20% 6.3V |
| C406 | 1-126-399-11 | s | ELECT, CHIP 10uF 20% 35V |
| C407 | 1-126-916-11 | s | ELECT 1000uF 20% 6.3 |
| C408 | 1-126-952-11 | s | ELECT 1000uF 20% 35V |
| C410 | 1-135-161-21 | s | TANTALUM, CHIP 22uF 10% 10V |
| C411 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C413 | 1-135-161-21 | s | TANTALUM, CHIP 22uF 10% 10V |
| C415 | 1-135-162-21 | s | TANTALUM, CHIP 33uF 10% 6.3V |
| C416 | 1-135-214-21 | s | TANTALUM 4.7uF 20% 20V |
| C417 | 1-135-135-21 | s | TANTALUM, CHIP 4.7uF 10% 35V |
| C418 | 1-165-128-11 | s | CERAMIC 0.22uF 16V |
| C419 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C420 | 1-135-259-11 | s | TANTALUM 10uF 20% 6.3V |
| C422 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| CN401 | 1-573-319-21 | s | CONNECTOR, BOARD TO BOARD 10P |
| CN402 | 1-573-342-21 | s | CONNECTOR, BOARD TO BOARD 28P |
| CN403 | 1-695-930-21 | o | CONNECTOR, FPC 16P |
| D401 | 8-719-200-91 | s | DIODE 11EQS10 |
| D402 | 8-719-404-35 | s | DIODE MA141WK |
| D403 | 8-719-200-91 | s | DIODE 11EQS10 |
| D404 | 8-719-820-05 | s | DIODE 1SS181 |
| D405 | 8-719-105-91 | s | DIODE RD5.6M-B2 |
| IC401 | 8-759-242-64 | s | IC TC4W53F |
| IC402 | 8-759-031-84 | s | IC SC7S04F |
| IC403 | 8-759-035-90 | s | IC SC7S02F |
| L401 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L402 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L403 | 1-412-027-11 | s | INDUCTOR CHIP 2.2uH |
| P401 | 1-467-713-11 | s | CONVERTER UNIT, DC-DC |
| Q401 | 8-729-230-60 | s | TRANSISTOR 2SA1586-YG |
| Q402 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q404 | 8-729-402-13 | s | TRANSISTOR XN1501 |
| Q407 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| Q408 | 8-729-920-99 | s | TRANSISTOR DTA114EU |
| Q409 | 8-729-907-00 | s | TRANSISTOR DTC114EU |
| Q410 | 8-729-920-99 | s | TRANSISTOR DTA114EU |
| Q411 | 8-729-230-63 | s | TRANSISTOR 2SC4116-YG |
| R401 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R402 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R403 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R404 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R405 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R406 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R407 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R408 | 1-216-842-11 | s | METAL, CHIP 56K 5% 1/16W |
| R409 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R412 | 1-218-679-91 | s | METAL 300 0.50% 1/16W |
| R413 | 1-216-842-11 | s | METAL, CHIP 56K 5% 1/16W |
| R414 | 1-218-679-91 | s | METAL 300 0.50% 1/16W |
| R415 | 1-218-679-91 | s | METAL 300 0.50% 1/16W |
| R416 | 1-216-831-11 | s | METAL, CHIP 6.8K 5% 1/16W |

(PSW-26 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R417 | 1-218-679-91 | s | METAL 300 0.50% 1/16W |
| R418 | 1-218-858-11 | s | METAL, CHIP 3K 0.50% 1/16W |
| R420 | 1-216-831-11 | s | METAL, CHIP 6.8K 5% 1/16W |
| R421 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R422 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R424 | 1-216-827-11 | s | METAL, CHIP 3.3K 5% 1/16W |
| R425 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R428 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R429 | 1-216-842-11 | s | METAL, CHIP 56K 5% 1/16W |
| R430 | 1-216-859-11 | s | METAL 1.5M 5% 1/16W |
| R431 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R432 | 1-216-853-11 | s | METAL, CHIP 470K 5% 1/16W |
| R433 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R444 | 1-216-826-11 | s | METAL, CHIP 2.7K 5% 1/16W |
| R445 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| SW401 | 1-570-385-21 | s | SWITCH, SLIDE |
| SW402 | 1-692-023-21 | s | SWITCH, DIP |
| SW403 | 1-692-066-11 | s | SWITCH, ROTARY |

PSW-27 BOARD (SSC-DC34)

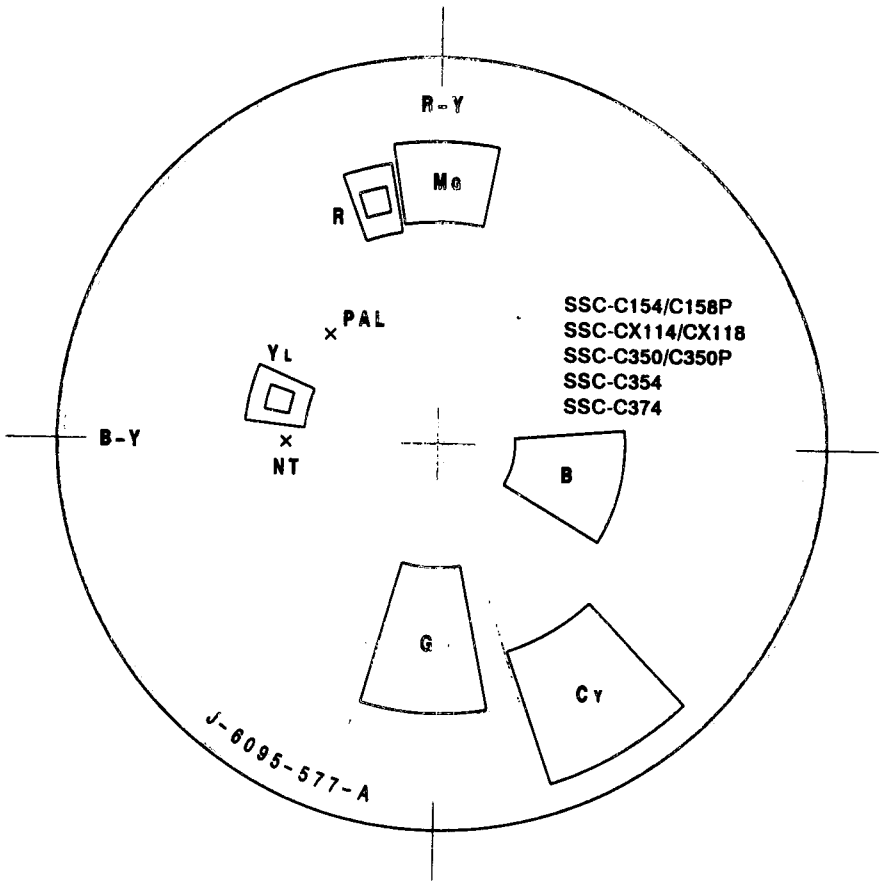
| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8276-896-A | o | MOUNTED CIRCUIT BOARD, PSW-27 |
| C401 | 1-165-379-91 | s | CERAMIC 0.0022uF 10% 500V |
| C402 | 1-164-156-11 | s | CERAMIC, CHIP 0.1uF 25V |
| C403 | 1-135-162-21 | s | TANTALUM, CHIP 33uF 20% 6.3V |
| C404 | 1-135-214-21 | s | TANTALUM 4.7uF 20% 20V |
| C405 | 1-135-135-21 | s | TANTALUM, CHIP 4.7uF 10% 35V |
| CN401 | 1-573-319-21 | s | CONNECTOR, BOARD TO BOARD 10P |
| CN402 | 1-573-342-21 | s | CONNECTOR, BOARD TO BOARD 28P |
| CN403 | 1-695-930-21 | o | CONNECTOR, FPC 16P |
| D403 | 8-719-820-05 | s | DIODE 1SS181 |
| IC401 | 8-749-924-48 | s | PHOTO COUPLER TLP121(GB-TPL) |
| L401 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L402 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L403 | 1-412-027-11 | s | INDUCTOR CHIP 2.2uH |
| P401 | 1-467-750-11 | s | CONVERTER UNIT, AC-DC |
| R401 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R402 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R403 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R404 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R405 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R406 | 1-216-829-11 | s | METAL 4.7K 5% 1/16W |
| R407 | 1-216-829-11 | s | METAL 4.7K 5% 1/16W |
| SW401 | 1-570-385-21 | s | SWITCH, SLIDE |
| SW402 | 1-692-023-21 | s | SWITCH, DIP |
| SW403 | 1-692-066-11 | s | SWITCH, ROTARY |

FRAME

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| CN503 | 1-580-724-11 | s | CONNECTOR, BNC "MONITOR OUT" |
| CN504 | 1-580-724-11 | s | CONNECTOR, BNC "VIDEO OUT" |
| CN752 | 1-580-172-11 | s | CONNECTOR, MICRO (RECEPTACLE) 4P "LENS" |
| F601 | ⚠1-532-737-11 | s | FUSE, GLASS TUBE 0.5A 125V :SSC-DC34 |
| HN1 | 1-766-287-11 | s | WIRE, FLEXIBLE CARD 14P |
| HN2 | 1-766-288-11 | s | WIRE, FLEXIBLE CARD 16P |

PACKING MATERIALS & SUPPLIED ACCESSORIES

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 1-580-173-11 | s | CONNECTOR, MICRO (PLUG) 4P |
| 1pc | ⚠3-758-584-11 | s | MANUAL, INSTRUCTION |
| 1pc | 3-758-584-41 | s | MANUAL, INSTRUCTION :SSC-DC30P |
| 1pc | 3-795-581-21 | o | SAFEGUARD, IMPORTANT :SSC-DC30/DC34 |
| 1pc | 3-184-777-02 | o | CUSHION (UPPER) |
| 1pc | 3-184-778-02 | o | CUSHION (LOWER) |
| 1pc | 3-184-780-01 | o | INDIVIDUAL CARTON :SSC-DC30 |
| 1pc | 3-184-784-01 | o | INDIVIDUAL CARTON :SSC-DC34 |
| 1pc | 3-184-786-01 | o | INDIVIDUAL CARTON :SSC-DC30P |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